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# YALE MEDICAL JOURNAL

**VOLUME III** 

NOVEMBER, 1896—JUNE, 1897

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### MEDICAL JOURNAL

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No. 1

#### ORIGINAL CONTRIBUTIONS.

#### THE PROPER DISPOSAL OF SEWAGE.\*

By Col. George E. Waring, Jr.
COMMISSIONER OF THE DEPARTMENT OF STREET CLEANING OF NEW YORK CITY.

The only proper disposal of sewage that is possible under our present knowledge is to bring all of its organic contents into close contact with atmospheric air, under conditions suitable for bacterial oxidation. This makes it necessary to consider the general question of bacteria.

In 1892 an enthusiastic sanitarian, urging the people to make their foul places clean in preparation for the dreaded pestilence is said to have exclaimed, "The cholera germ is already thundering at the gates of New York!" I have, myself, had frequent occasion to hear educated physicians assert that all streets should be asphalted because the germs of disease infest the crevices between paving-stones, and proceed thence on their fatal mission among the people. To the lay mind, all bacteria are pernicious, all microscopic life is pathogenic, and the salvation of the race is to be sought in disinfection.

It is not necessary to say to recent students of medicine that all this is fallacy, that bacterial activity is the mainspring of organic life, that the pathogenic organisms are very subordinate to those which protect us from them, and that, under ordinary conditions, disinfections should be avoided as a clog in the wheels of nature's most beneficent processes. The visible and obvious facts of life, disease and death, and the deductions drawn from these and formulated, before the microscope and the studies of bacteriologists had opened the modern road to knowledge, led to the erroneous professional and popular ideas whose influence is

<sup>\*</sup>The Annual Address of Medicine delivered at Yale University Commencement, 1896.

still so widespread and controlling. Although we are now, in a certain sense, only at the threshold of real knowledge, we are able to assert some things with confidence and we are justified in assuming certain general principles, which have a direct bearing on the relation of the human body to its surroundings.

We know that certain diseases are communicated by certain particulate living organisms, and that certain conditions favor the pernicious activity of these, while other conditions interfere with or prevent their activity. Probably the most important controlling condition is to be sought in the vital vigor or lack of vigor of the individual.

A sound man, full of vitality, well fed, well worked, but not overworked, and with an elastic step and spirit, is generally safe in the presence of most infections; while a listless, lethargic, dyspeptic and spiritless man may fall an easy prey to any infection to which he is subjected. It is reasonable, therefore, to suppose that hygiene is often more important than sanitation—save that unsanitary surroundings may have a marked tendency to undermine our powers of resistance and to counteract the effect of individual healthy tendencies. As we study the phenomena on which our conclusions in these matters are based, we find that the most important factors of health and disease, when men are living in communities, are allied with the changes that take place in their organic wastes, and with the relations that these changes bear to the environment of their lives.

I am not a bacteriologist, nor have I been able to keep pace even in a general way with the rapid developments of the new science. It is to be understood, therefore, that what I say on this subject is said only as an expression of the general conclusions which sanitarians have formed as to the leading principles that bacteriological study seems to have developed. I think it may be assumed that the conclusions are substantially sound.

Living organisms, whether animal or vegetable, are but a temporary form and expression of constantly moving matter. The organic world is in a state of flux and of almost ceaseless activity. The elements are forming, unforming and reforming themselves into various shapes and conditions. They may be temporarily arrested and stored, as in vegetable matter, they may be slowly changing, as in the bony structure; or they may be undergoing constant transmutation, as in the blood and softer tissues. They are held in these various forms by the mysterious and controlling power of life. When this power is withdrawn, their tendency to return to the elemental state, ready for renewed use,

has its sway, and dissolution proceeds, rapidly or slowly, according to the character of the substance, and according to circumstances, but it is always inevitable.

The continuance of organic life on the earth depends on such transformation, and the natural forces of life, death and decay hold their universal dominion. While decay may be delayed, as by disinfection, by embalming, or by desiccation, it is only a question of time and condition when its activity shall be renewed. We have, therefore, to assume that in the economy of the universe, death and destruction are as important as birth and growth.

Save as an effect of actual active combustion, all resolution of organic matter into its elements, and all progress of organic matter toward complete resolution, is the work of minute organisms which are known under the general name *Bacteria*. For example, the organic contents of a pailful of liquid wastes, properly exposed to the air, require the action of at least three classes of bacteria.

First: Those which attack the carbonaceous compounds and break down the structure, forming carbonic acid and ammonia.

Second: Those which convert the ammonia into nitrous acid.

Third: Those which convert nitrous into nitric acid.

This is recognized as the regular order under the most favorable conditions—as to complete æration, suitable temperature, and, for the nitrifying process, the absence of light. The completion of the nitrifying process marks complete conversion to the best form of plant food. Whatever interferes with this simple and direct process leads to a complication of method and a delay of result.

In other words, so far as is now known, all forms of organic decomposition from the first fermentative softening of the less stable carbo-hydrates to the final nitrification and ultimate chemical change of the ammonia compounds into which the albuminoid matters are first resolved, are effected through the agency of different living organisms. These act independently or in association, and produce the most various results, according to the circumstances and environment under which they are developed and exist.

For example, if, instead of a proper exposure of the organic matter in our pail of waste liquid, as by spreading it over a grass plat, its only access to air is by the contact between the surface of the liquid and the atmosphere, most of the oxygen required for the first breaking down of the organic form will be taken from within the material itself, the form of decomposition will be changed, intermediate compounds, always offensive and probably often infectious, will be formed, and the whole process will be thrown out of joint.

In this brief, and by no means scientifically explicit, description, we have the two widely divergent types of sewage disposal which may result in healthful or unhealthful, conditions, and it is in the light of the facts here indicated that the proper disposal of sewage must be carried on.

There can be no proper disposal that does not secure rapid resolution into elements. In fact, no other result is admissible from the point of view of the sanitarian. Disinfection, as by the use of chlorides and of other germicide methods, simply arrests the necessary process, with a certainty that whenever and where ever the power of the germicide shall cease, whether from dilution in a stream of water, from evaporation, or from whatever cause, the processes of decomposition or putrefaction must inevitably begin. This potent energy for reclaiming to its further use all organic matter that has become useless, pervades all nature and is carried on under all conditions which permit the development of destructive bacteria, of one character or another.

The prevailing methods of sewage disposal may be divided into two distinct classes—one proper, the other improper. Concerning the latter, we have only condemnation to offer; concerning the former, the essential condition is covered in the statement already made that all proper disposal of sewage is effected, and is effected only, by exposure to air. This seems a simple rule, but it is an imperious one, and it must be obeyed to the letter. A bit of meat not larger than an egg is not exposed to the air, though it lie on the surface of the ground. Only its surfaces are so exposed, and under suitable conditions the interior of its substance will undergo a putrefactive decomposition before the destruction of the exterior portions shall have laid it bare to the air. A bowl of urine, exposed at its surface, rapidly becomes putrid because its lower portions must undergo changes involving the life of organisms not needing air for their growth.

In practice, of course, the amount of putrefaction taking place in small particles of matter is of no consequence, but the principle here indicated controls the manner of decomposition in the case of larger masses. The only effective method is to disseminate the organic matter that the sewage contains, in such a way as to expose it completely to the oxygen of the atmosphere. to the air contained in the surface of the soil, or to the oxygen

dissolved in a body of water, and in each case the limitation must be observed that the water must not receive a larger volume of sewage than its dissolved oxygen is capable of taking care of, and that the soil must not remain saturated after it has received enough sewage to use up its air. In the case of direct surface exposure to the atmosphere the only limit would be the accumulation of so much material as to prevent the free oxidation of its lower layers, and this rarely occurs in practice, with proper intermission of application.

Under the conditions set forth, no matter how secured, we are not only sure of an inoffensive, complete and permanently reliable destruction of waste matters, but we are, in all probability, perfectly secured against the development, or even the continued existence, of those other minute organisms which are popularly known as disease germs.

I was shown, years ago, in the laboratory of the Surgeon-General's office at Washington, an experiment with the culture of various specific germs on gelatine plates, by what a farmer would call "drill cultivation." The germs to be observed were taken up by a needle point with which lines were drawn across the gelatine. The subsequent development of these germs was as easily traced across the plate among the mass of adventitious growth sown from the atmosphere, as are the rows of sprouting corn among the young grass and weeds of the field. But without protection from the floating matter in the air, it would not be long before the same organisms which are active in the destruction of the organic parts of sewage, would gain a foothold, and then all minor and feebler growths would be swept out of existence and apparently consumed.

It is not now known how far it is safe to trust to this action, but the fact that on the great irrigation fields of the Berlin sewage farms, and under the concentrated application of the sewage of Paris at Gennevilliers, and over the hundreds of sewage farms in England, not a single case of typhoid fever, or cholera, or other disease of allied character, has ever broken out among the people living and working on those fields, makes it practically clear that wherever free exposure to the atmosphere is given, there, if disease germs exist at all, they meet an early death. It is also safe to say that, in the accumulated horse droppings and street dirt filling the crevices of Belgian block pavement, no disease germ would stand a ghost of a chance in the presence of the more vigorous organisms which this material would be feeding.

Nothing else in connection with sanitary matters now so exercises the public mind as the pollution of streams with sewage. Legislatures and courts will soon be on a hot chase after houses, villages and towns which are fouling water courses with sewage. Various schemes are being devised and experimented with, having for their object the purification of sewage before it escapes into the river. Several inland towns in Connecticut, shying at the unknown terrors of sewage farming, or intermittent filtration, are considering the construction of huge sewers which shall deliver their whole outflow along the Connecticut shore of Long Island Sound; whence there will come a local outcry of which an abundant crop of injunctions is the predestined result. perfectly safe to say that there is no reliable refuge for these towns other than that indicated above, viz.: the complete exposure to air of the organic matter of their sewage, under proper conditions. This is nature's remedy and nature's only remedy. Chemical precipitation processes, calculated to withdraw the obvious solids from sewage, leaving its more putrescible dissolved matters to flow on and foul the river, will continue to meet as certain defeat as they have already met in the attempt of the City of Worcester to prevent the pollution of the Blackstone River. Chemical precipitation implies a certain amount of disinfection, or antiseptic action, which allows the effluent to pass perhaps a little farther on before its putrefaction begins, but the end, sooner or later, is sure to be as fatal as it has been in the case of Millbury, which is only five miles below the outlet of the Worcester sewer, and where the water of the Blackstone is intolerably foul, in spite of the removal of the "sludge" at a cost of over \$30,000 per annum. Indeed, the conditions now observable in this case make one wonder if it would not be better to reverse the operation—allowing the more inert visible solids to pass into the river and to withhold the putrescible matters in solution.

Wherever the volume of the river is not so great as to insure by dilution a permanent sufficient supply of dissolved oxygen in the stream, there the organic matter of sewage must be withheld. It can be properly withheld, so far as the world now knows, only by some method covered by the general designation: "Soil Treatment." We hear a good deal about surface irrigation and intermittent downward filtration, as though they were different processes. They are different only in degree, not at all in kind. The process in each case consists in the distribution of the organic matter over the surfaces of the particles of

the upper and ærated soil, and to a greater or less depth according to the intensity of the application, and the subsequent exposure of that organic matter to the renewed air in the soil.

It would be far beyond the reach of a brief address to enter at all into the technical methods by which either irrigation or intermittent filtration should be carried out. This is the province of the engineer, and the remedy is to be regulated in each case according to its conditions and circumstances.

It would hardly be worth while to call especial attention of physicians to this more public part of the subject, were it not for the fact that in the smaller communities the opinion of doctors has at least as much weight on the lay mind in matters of this sort as it is entitled to. This makes it necessary to say that in sewage disposal there is no way to whip the devil round the Theorists, and those who hope to get the best results at half price, may say what they please—and they say a great deal -there is only one way to accomplish what must be accomplished sooner or later. With this view, it is to be said—not without fear of contradiction, perhaps, but with the certainty that contradiction will be short-lived—that chemical precipitation is only a makeshift, and is destined to disappear from use save in cases where a very partial purification will suffice. Also, that the building of intercepting sewers, calculated to pass the nuisance created by one population on to the neighborhood of another, will result in total loss. Take, for example, the case of Waterbury and other towns on the Naugatuck, where it is seriously proposed to adopt this method. Such a sewer, flowing with such an inclination, would practically carry the wastes of this valley into Long Island Sound, almost unputrefied. It would be landed there largely as fresh sewage. No one supposes, of course, that after it reaches tide water it would remain fresh, and all who know how the delivery of sewage under such circumstances acts on the smaller scale, and all who know the sentiment with which its advent in the neighborhood of country seats is received, do not need to be told that the bays and harbors, and immediate shores of the Sound would be fouled with putrefying sewage, and that those who own those shores would adopt the same measures for protection that are now resorted to by the riparian owners of the river. Furthermore, this device is not necessary. It is neither necessary nor economical. form or other of soil treatment is adequate and practicable for the complete solution of the problem in the case of every town in the world.

We come now to another branch of the subject, where reform is quite as necessary as in the more conspicuous instance of concentrated communities, and where the influence of the physician will be almost all-powerful, for he is the adviser of the family in health matters. That is, to the case of the isolated house, the house which has and can have no connection with a sewer, and which ordinarily takes its water supply from a well. The individual house is the single factor of the sewage disposal problem.

What seems to be, but is not really the most serious factor, is feecal matter, which is deposited in an underground vault, shut in from the circulation of air and covered with an outhouse.

What is ordinarily regarded as of very secondary importance may be designated as chamber slops.

What is popularly considered so unimportant, that it is not long since engineers recommended its separate removal, is the liquid waste of the laundry and the kitchen, which is run into a cess-pool to filter away through the soil, or to flow off through a fissure of the rock, or a porous stratum of the ground.

The second of these three classes is disposed of in connection with one of the others; that is, with the fœcal matter, or the kitchen wastes, as convenience may suggest.

No such distinction of character and quality as is popularly assigned to these elements of our wastes is correct. The fouling matters of each are essentially alike; that is to say, they are organic wastes on their road to final decomposition, and their decomposition will be controlled by the agencies and limitations already set forth. One or two things about these matters must be borne in mind.

In the first place, man discharges five times as much solid matter in his urine as is in his fœces.

Second: From the point of view of sewage disposal, the only difference between fœces and the suspended matters of the kitchen sink waste is a difference of degree. The first has already gone a step farther toward final resolution. As produced, one has an offensive odor, and the other has not, but the other catches up with the one in a very short time; so that, within a brief period, a cess-pool filled with water closet matter, and a cess-pool filled with kitchen waste, cannot be distinguished from each other. There is, scientifically, a distinction which ordinarily lasts but a little while; that is to say, fœcal deposits are subject to infection with the germs of typhoid fever and

other diarrhoeal diseases from which kitchen waste, as first produced, is exempt; but the slightest infection of the latter with these pathogenic organisms will soon spread itself through the mass so that, practically, there is nothing to choose between the two. Each is a nuisance, each is a menace to health, and each, as now treated, is simply inadmissible.

There can be no proper disposal of the sewage of any house in which human beings live short of the absolute abandonment of the privy and cess-pool, and the purification of all these wastes by soil treatment.

It seems incredible that such a large proportion of intelligent persons still fancy that these evils are unavoidable. It is not much more than thirty years since their removal was first undertaken in a practical way by the Rev. Henry Moule, Vicar of Fordington, the inventor of the Earth Closet. Acting on what was then the universal belief that fœcal matter was as much more dangerous than the others, as it was more offensive, he devised a mechanism for burying this material in dry earth, learning by practice the effect, but not suspecting the cause, of the immunity thus secured; the cause being the action of destructive bacteria acting within the mass by the aid of the air, which dryness and porosity admitted.

Finding it impossible to make a proper disposal of kitchen and laundry wastes by the earth closet, he laid, a little below the surface, and along the roots of a row of grapevines, an openjointed tile drain, into which these liquids were discharged. They leaked out into the soil and were, as he supposed, taken up by the grapevines. There was then no knowledge to show that they were first reduced to the condition of plant food by the ærobian bacteria of the surface soil. Mr. Rogers Field, a distinguished engineer of London, amended this process and made it practicable by adding to its appliances a reservoir for the retention of the outflow from the house until it should amount to enough to flow through and fill the whole drain, or series of drains, thus securing an intermittent discharge. He applied this system to the disposal of the sewage of a small village in England.

Being informed of these methods, in 1868 I introduced them in connection with my own house at Newport. It is not worth while to go into an account of the progressive improvements that followed this first simple application of the process, further than to say that, with a very wide extension of the system, until three or four years ago, it was the almost universal custom

to deliver the outflow of the reservoir (flush tank) into openjointed drains, laid not more than eight or ten inches below the surface of the ground. Since that time, there has been a constantly increasing tendency to discharge the sewage directly on to the surface without the use of the tile drains. This may be said to be now the favorite practice, except where the disposal area is very close to the house, or is exposed to the sight of passersby. Too close proximity is objectionable only for purely sentimental reasons, and the question of exposure to sight is important only because people smell so much more with their eyes than they do with their noses. We are now constantly constructing surface disposal works on pasture fields at small country places, and even on the rear lawns of town lots, and I predict that before the end of the century the use of the underground tiles will have become very exceptional.

Briefly described, the process in its present development is this: All of the water-borne wastes of the house—and a water closet may be used without other water supply than may easily be furnished by hand pumping—are delivered into a reservoir open at the surface, and built, preferably, of white glazed bricks. This is provided with a wire screening basket to hold back paper, etc., and with an automatic siphon discharging its contents immediately on its becoming filled to the overflow point. These contents flow on with a rush to what is called a gate chamber, a device for turning the flow to either one of three different outlets at will. These three outlets deliver over the surface of three small tracts of grass or garden land. are marked "Monday," "Wednesday," "Friday," and it must be the duty of some person to change the gates on these days, so that each tract shall have its two or three days of use in each week, and its four or five days of rest for æration and refreshment. The screening basket should be cleaned out on the same days, and the walls of the basin brushed down with a broom.

With an ordinary country seat, under ordinary conditions, the total cost of the work is about \$300. As is well known, land receiving sewage in this intermittent way, instead of becoming worn out, grows more and more effective as a means for purification. It is not to be said, of course, that this process is anything complete. The inventive American will be quite likely to improve it greatly, but, as it exists, it is absolutely perfect as a sanitary device; it is free from all objection as to convenience, and esthetically.

It will, of course, strike the average practical man as "trouble-

some." He has so long been accustomed to the out-of-sightout-of-mind process of direct delivery to a hidden hole in the ground, that he is inclined to find a bugbear in the fact that thrice a week someone must spend ten minutes in changing the location of a gate and tidying up the tank. Such objection, carried to its ultimate result, would be equally applicable to the sweeping of houses, the washing of clothing, and the bathing of the person. This very limited amount of vigilance is the necessary price of the liberty to live protected against nuisance and danger. It is in this case the price to be paid for taking the long journey from barbarism to civilization, and giving to every isolated house in the country the unspeakable benefit of a proper method of sewage disposal.

## THE THEORY AND PRACTICE OF SURGICAL DRESSING.

By Leonard Woolsey Bacon, Jr., M.D. \*

#### LECTURE I.

In discussing the subject of surgical dressings I propose not only to recite in order the various steps of covering a wound with a dressing, but also to consider, so far as our time will allow, the reasons for choosing one form of dressing for one wound and one for another. The form of dressing will vary in different classes of wounds according as they are large or small, open or closed, septic or aseptic, shallow or deep. I propose, therefore, to divide the general subject of the theory and practice of surgical dressing according to its application to the following classes of wounds:

- I. Closed Aseptic Wounds.
- II. Open Aseptic Wounds.
- III. Mildly Infected Wounds.
- IV. Septic Wounds and Phlegmonous Processes.
- V. Sinuses.
- VI. Burns and Ulcers.

<sup>\*</sup>Three lectures delivered before the pupils of the Training School of the Connecticut General Hospital at New Haven, Conn.

#### I. CLOSED ASEPTIC WOUNDS.

Closed aseptic wounds require a dressing which shall seal them hermetically immediately after operation if possible, and shall at the same time provide that if this result be not immediately attained, the dressing itself, without being disturbed, shall come to form such a seal at the earliest possible moment. This seal, once formed and maintained, excludes any possibility of infection from without. The dressing of aseptic closed wounds is then the method and process of establishing and maintaining such a seal.

#### A. ESTABLISHING THE SEAL.

The seal in its simplest natural forms is exhibited in the eschar following the actual cautery and in the firm scab which forms spontaneously through the drying up of the blood and lymph poured out from any tiny, aseptic flesh wound.

The seal in its simplest artificial form is exhibited in the simple collodion dressing applied to small flesh wounds. This collodion dressing is applied in the following manner. In order to have the collodion adhere to the skin two factors are essential: first, the entire arrest of all hæmorrhage; second, the complete freedom of the surrounding skin from moisture. The latter requirement is best attained by pouring ether over the part to be No powder should ordinarily be dusted on a wound to be sealed with collodion, or if any powder, iodoform, because it is soluble in the ether in which the collodion too is dissolved. Having freed the part from blood and moisture, a single thickness of plain absorbent gauze, or of iodoform gauze, cut large enough to extend from half an inch to an inch beyond the wound in every direction, is now, laid over the wound for the purpose of forming a fibrous framework to support the film of Flexible collodion is now painted on with a camel's collodion. hair pencil to cover both the gauze and a strip about half an inch wide beyond its edges. When the ether has evaporated the wound is hermetically sealed with a pearly-white, tough layer of collodion and gauze, impenetrable by microbes and insoluble in A collodion dressing should not extend unnecessarily far beyond the margin of a wound, for if a large number of sweat glands and sebaceous glands are covered over, their combined secretions will accumulate beneath the film and will lift it from the skin, breaking the seal and defeating the object of the dressing.

In the dressing of larger aseptic wounds these two types of

the hermetic seal are merely elaborated, one or both being brought into play with as much judgment and discretion as the dresser can command. The formation of the hermetic seal we seek to attain in one of three ways—either by inducing the immediate formation of a natural scab through desiccation of a minimal amount of discharge just at the lips of the wound, or by inducing the later formation of a natural scab over the lips of the wound, after excessive discharges shall have been drawn away and dried in the dressings; or, lastly, by the interposition of an artificial scab.

1. Inducing Immediate Scab Formation. The way in which we seek to induce the immediate formation of a natural scab is by dusting over the lips of the wound a small amount of a powder capable of forming a paste with blood-serum. This powder, needless to say, must be sterile, its other qualities may vary indefinitely according to the judgment or the fancy of the dresser or the needs of the particular patient. Iodoform is widely used for this purpose; its special indications are cases where the perfect asepticity of the wound is not beyond suspicion, and cases where a mild local stimulus to the edges of the wound is required to promote the pushing out of capillaries into the clot of fibrin or blood which is to agglutinate the walls of the wound. Iodoform, perhaps not, it is true, when dry, but when moistened by wound secretions, has a decided inhibitory effect upon the microörganisms of wound infection. That it stimulates the activity of the local tissues can be seen from the fact that in susceptible patients it is capable of producing even a severe dermatitis.

Acetanilide is also widely used for this purpose. Its principal function is that of an exsiccative, i. e., it forms, as does the iodoform, a paste with the wound secretions; this dries and hardens more quickly than the secretions could dry and harden without it and forms a scab which seals the wound. Some local stimulation is probably also afforded to the tissues though slighter than in the case of iodoform, as acetanilide frequently causes smarting and tingling when dusted on to a fresh wound. The inhibitory action of acetanilide upon germ development, my experience leads me to believe, is considerably less than that of iodoform. In a somewhat doubtful sealed wound I should unhesitatingly prefer the former. Acetanilide has the advantage of being very inexpensive.

Several of the organic compounds of bismuth hold a very high rank as dusting powders where the cost does not have to be considered. Of those that I have tried the theiosalicylate, sold under the name of "thioform," has seemed to me the most effective as a mild stimulant and especially as an inhibitant of germ growth. Bismuth subnitrate and other inorganic salts of bismuth are specially useful where you wish to avoid any stimulation (stimulation implies irritation) of the local tissues. Their inhibitory action on germ development is appreciable though slight.

Zinc oxide comes under nearly the same category as the last, though its action on germs is almost insignificant.

Starch or flour would form an excellent exsiccative but are prone to decomposition under the influence of germs.

Kaolin or talc, sterlized, ought to answer very well the purpose of forming a seal, or, indeed, in an emergency even ordinary loam sterilized by baking.

The most efficient exsiccative I am acquainted with is "aristol," which, however, has a great disadvantage in that the crust it forms is too insoluble to make it safe to use indiscriminately.

A well-sutured wound dusted with one of the powders named above, moistened by secretion, is hermetically sealed as soon as the paste formed is dry. This seal, however, is very slight and easily broken down. Two possibilities the dresser has to provide against: first, immediate secretions may be so profuse that the paste cannot quickly dry; second, the paste once dried may again become loosened by an excessive discharge coming on after reaction from shock. Were the seal tougher the ideal practice would be to leave the wound when sutured and dusted, without further dressing. As this is, however, in most cases obviously insufficient, two further methods are in use according as much or little discharge is expected.

- 2. Inducing Later Scab Formation. If but little discharge is expected, after dusting the wound, gauze or an equivalent absorbent is applied next to it in generous quantities in order to soak up excessive secretions into its deeper layers, and to allow the outside air, sifted mechanically from germs in passing through the outer layers, to dry the moist layers next the wound and eventually harden the paste over the wound edges.
- 3. The Use of an Artificial Scab. In larger wounds or those from which more discharge is expected an artificial scab is laid over the wound, upon whose lips alone a small amount of powder is first carefully dusted. From this one of two results is expected. Either, on the one hand, as in the case of the collodion

dressing first alluded to as a type, the artificial scab, which may consist of the aforesaid film of collodion, of green protective, of gutta-percha tissue, or of silver foil, by being glued to the skin about the wound, as is the case with the collodion, or by being pressed tightly to the skin by the further dressings, as is the case with the other protectives mentioned—the artificial scab will mechanically prevent the escape of discharge beyond the minimal quantity necessary to moisten the powder to a paste, the more desirable event—or, on the other hand, the artificial scab will allow any excess of secretion to pass off under its edges to be there absorbed into the dressings and retain only a minimal quantity of secretion actually in contact with the wound.

The question of sepsis or asepsis is purely a mechanical one. If filth and germs can be kept out of a wound there will be no infection; where profuse discharges remain in contact with a wound, infection is peculiarly likely to occur. The protective tissue is an additional precaution against wound infection then in just this way, that though the absorbent dressings become infected, as in cases with profuse discharge they are very liable to in spite of every care, yet a mechanical obstacle is opposed to the entrance of germs into the wound. Through the protective they cannot go, they must work their way around under its edges. Where profuse discharge is expected the protective sheet may be perforated (by thrusting a knife through it, not by cutting away pieces of it) in two or three places to allow the more rapid escape of secretions and their absorption into the dressings. mechanical protection to the wound though not quite so complete is still very efficient, as germs can pierce the shield only at the perforations. Efficient as protective strips are in keeping out germs, it must be remembered, however, that they are equally efficient in preventing the escape of germs that are already within a wound. No suspicious wound therefore should be Protective strips unless perforated covered with protective. should not be very wide else a large amount of secretion may lift the protective strip like a huge bleb, and the object of the protective is to keep any unnecessary secretion away from the wound.

Having dwelt at some length on the method of establishing a seal over a wound by the use of exsiccative powders, gradual desiccation, and protective strips, I shall now consider more briefly the rest of the dressing of an aseptic closed wound, the function of the remainder of the dressing being more obvious.

#### B. MAINTAINING THE SEAL.

The remaining parts of an ordinary dressing are three: First, an absorbent body impregnated or not with an antiseptic—hospital gauze is the type and the best of all absorbent bodies for this purpose; second, an elastic body, preferably, though not necessarily absorbent, of which class absorbent cotton is the most widely used, though absorbent lamb's wool is far superior; third, a bandage of gauze, muslin or flannel in different cases. These three essentials we will now briefly discuss.

1. The Absorbent Body. In private work gauze will probably long remain the favorite dressing, in hospitals and in military surgery cheaper substitutes may often take its place. One important matter I wish, however, to emphasize. If no protective strips are laid over the lips of the wound some woven fabric should invariably come next the wound and never cotton, jute, oakum, wool, moss, sawdust, waste or any other of the substances used, and properly enough, in wound dressing. If you are driven to use any of these substitutes for absorbent gauze, at least see to it that a clean rag, a bit of a handkerchief or of a pillow-case, towel or shirt, some woven fabric comes next the wound. This is important even in aseptic closed wounds such as we are now discussing, but far more so in open wounds, septic wounds and all ulcers.

The material used for the absorbent body will be determined by what may be procured, gauze up to the present is the best I know of. We will now consider the question of its impregnation, taking for granted that you have assured yourself of its sterility when applied.

Gauze may be impregnated with insoluble antiseptic powders such as iodoform or acetanilide, or with soluble antiseptics such as carbolic acid or bichloride.

The first of these gauzes are intended to come next the wound, and are used according to the same indications as the dusting powders which they have in their meshes, viz., by their irritating qualities they stimulate the tissues to which they are applied; by their mechanical form they assist in drying the secretion, and by their chemical action they inhibit the development of germs. They aid then, theoretically, and to my mind, actually, to a certain degree, in hastening the formation of the cicatrix, and in keeping the dressing dry and sweet, thereby helping to keep the wound dry and sweet. Such a thing is possible, as germs acting on the discharges in the dress-

ings without penetrating to the wound, and dressings, therefore, even from a dry, sweet wound may be a source of infection to other wounds if carelessly handled. In the same way there may be in the depths of a wound infectious material which has not yet been poured out into the dressings. Neither possibility should be lost sight of. Do not despair of finding a wholesome wound under a dressing that may have some odor of decomposing discharges, and allow yourself to approach a recent wound with any less care under the impression that infection has necessarily taken place, but rather with more care that infection which perhaps has not taken place may not be precipitated by negligence. This is just the advantage accruing from the protective and the iodoform gauze or acetanilide gauze, that infection on one side or on the other may be limited by these layers of the On the other hand do not be over-confident that the wound is thoroughly aseptic because the dressings do not seem to be foul.

If it is deemed advisable to lay iodoform gauze or acetanilide gauze next the wound, they are used generally but sparingly, and the bulk of the absorbent body is to be made up with plain or bichloride gauze, or some substitute for these.

It has been questioned whether dry bichloride gauze, on the same exposure to infection, will remain sterile longer than plain gauze. The question hangs on two points. Bichloride brought into contact with the albuminous bodies present in blood-serum is in part decomposed and rendered inert. Bichloride when dry has little or no antiseptic action. The argument, therefore, is: If the dressing be kept dry, germs entering from without are not affected by the bichloride particles in the meshes of the gauze; if the germs reach the gauze with the wound secretion, the albuminoids in solution in the secretion precipitate the bichloride and make it powerless to act on the germs. I am not myself inclined to think that the actual efficiency of the bichloride impregnation has been disproved and I feel disposed accordingly to give the patient the benefit of the doubt and do not think that the bichloride impregnation should be discarded. applied over and about the wound a generous amount of sterilized or antiseptic gauze, or jute bags, or moss bags or whatever absorbent is to be used, we are now ready for a thick layer of some elastic substance between the absorbent body and the bandage.

2. The Elastic Body. The functions of the elastic body are as follows:

- (a) It serves to distribute evenly the pressure of the bandage.
- (b) It maintains a gentle, even pressure should the bandaged limb shrink through subsidence of previous swelling and so loosen the bandage and allow it to slip.
- (c) The elastic body yields, should the limb swell, and so prevents any possibility of gangrene from too tight a bandage.
- (d) It serves as a cushion to break the force of any blow or knock that might aggravate the wound.
  - (e) It keeps the parts beneath it warm.
- (f) It mechanically filters the air which reaches the wound only after passing through it.

Absorbent cotton meets these requirements very well, though as far as elasticity goes, a good quality of cotton-batting is better. Where expense does not need to be considered, sterilized, absorbent lamb's wool meets all the indications for this purpose better than anything else.

3. The Bandage. Unbleached muslin bandages are generally better to use over an ordinary dressing than those of bleached muslin or of gauze. Their pressure if properly applied is more even than that of gauze bandages and they are more or less waterproof. It is often well to bandage the dressing in place with a sterilized gauze bandage laying on an unbleached muslin bandage over all. Dust will pass through a dozen thicknesses of gauze bandage and readily contaminate the dressing; with an unbleached muslin bandage this will not occur.

"No impervious covering should be used on the outside of the dressing, as the free admission of dustless air is desirable. It will hasten the exsiccation of the absorbed secretions and thus insure the protective action of the dressings even if the chemicals employed become inactive or inert."\*

Pins will ordinarily retain a bandage properly put on. A few narrow ribbons of adhesive plaster are frequently useful outside. of all.

#### C. RE-DRESSING.

Wounds should not be re-dressed without cause. A closed aseptic wound adequately dressed should be re-dressed only on the appearance of one or more of the following indications:

- 1. Pain, beyond what could normally be attributed to the operation, the pain being localized in the wound or in the area of distribution of the nerves which pass through or near the wound.
  - 2. Fever, persisting for more than forty-eight hours and not

<sup>\*</sup>A..G. Gerster, Rules of Aseptic and Antiseptic Surgery, 2d Ed , p. 12.

then declining, and accompanied with headache, loss of appetite and general malaise.

- 3. Slipping or other disarrangement of the dressing.
- 4. (a) Gross soiling of the dressings from the wound discharges, or, (b) slight soiling with discharge when coupled with contamination of such soiled spots with dirt from outside. The treatment of the dressings when from profuse oozing the discharges show in spots on the outside where they have soaked through—should be, in the absence of any other signs of wound-contamination, simply this: Dust any such spot generously with powdered iodoform, add an extra layer of absorbent cotton and another bandage without disturbing the original dressing in any way.
- 5. The fifth, and in fortunate cases, the only indication for re-dressing an aseptic closed wound, is the removal of sutures. Retention sutures, if not buried, may have to be removed in from forty-eight to sixty hours. Other sutures, if not of absorbable material, may be removed, and generally should be, from the seventh to the twelfth day.

All other interference with a presumably aseptic closed wound is utterly pernicious and unwarranted by good practice. "Where the operation has involved parts of the skeleton, as in amputations of extremities, exsections of joints, necrotomies, etc., the dressings have to be left undisturbed much longer. After exsections of the knee-joint, for instance, where bony ankylosis is aimed at, the first dressing is not removed without a clear indication before the thirtieth or fortieth day." \*

#### II. OPEN ASEPTIC WOUNDS.

The amount of discharge expected, or suspicions of the absolute asepticity of the wound, or scantiness of the skin-flaps may lead the surgeon to leave a portion or the whole of a wound open, or to place within it tubes of rubber or glass, or strands of wicking, gauze, silk, horsehair or some other foreign substance, for drainage. The dressing of such a wound would not, ordinarily, differ greatly from that of a closed aseptic wound, except that the dressings would have to be still more copious. If a foreign body were left in the wound for drainage, its function, if the wound proved to be aseptic or nearly so, would be over by the end of thirty-six or forty-eight hours and the wound would need to be re-dressed at that time for the purpose of removing the foreign body. When the original dressing of an unhealed wound has once been interfered with it will probably have to be renewed

<sup>\*</sup>Gerster, Op. cit., p. 22.

after an interval of a few days, from two or eight days, according to the progress the wound has made in healing.

I cannot do better than to transcribe what Dr. Gerster has to say in regard to Schede's method of healing under a moist blood-clot, and report the extremely instructive illustrative case which he cites in this connection.

"There is a considerable number of cases where extensive loss of substance consequent upon an injury or an operation precludes approximation of the walls of the wound and renders healing by primary adhesion impossible. In these cases a blood-clot forms and fills up the defect soon after the injury or the operation. In an aseptic wound this blood-clot serves a highly useful purpose in protecting the raw surfaces and preserving their vitality, provided that the integrity of this blood-clot can be again protected from exsiccation, on the one, and from putrefaction on the other hand. If this condition is fulfilled granulations will gradually consume, as it were, the blood-clot, and by the time the clot disappears cicatrization will be completed."\*

It is evident that dusting powders would here be out of place, but with the exception of the powder, the dressing I have described above for closed aseptic wounds would be required; viz., a sheet of protective overlapping the margins of the wound; a layer of iodoform gauze; a generous mass of bichloride gauze; cotton or wool; and a bandage. "The outer dressings will absorb and render innocuous the surplus of blood and serum; the film of protective tissue will preserve the underlying clot in a moist condition."

"Tissues of low vascularity, as bone, fasciæ and tendons, will certainly undergo superficial or deep-going necrosis if exposed to evaporation, even if asepsis be rigidly preserved."

Case. "George Braun, German Hospital, aged sixty-six. Rodent ulcer of the nose. Feb. 19, 1896. Extirpation of diseased parts followed at once by partial rhinoplasty. Sutured parts dusted with iodoform. Large defect on forehead (the flap including the periosteum) inadvertently covered with iodoform gauze, without interposition of rubber-tissue protective. When the dressings were removed ten days later no suppuration was found, but the surface of the frontal bone was seen to be exposed (no blood clot), and very dry. After four weeks the first sparse granulations were observed sprouting out of the denuded bone, which eventually became cicatrized over in the fall of the

<sup>\*</sup> Gerster, Op. cit., p. 12).

same year. Had the protective not been omitted rapid cicatrization would have been secured."\*

Such are the general principles of surgical dressing as applied to aseptic wounds, open and closed.

#### III. MILDLY INFECTED WOUNDS.

Mildly septic recent wounds may be treated with much the same dressings as above described, with but two slight, but important differences:

- 1. The artificial scab must not be used and the same prohibition rests upon the use of "aristol," as this forms a hard, insoluble crust under which suppuration may proceed and the pus be retained to the detriment of the healing process.
- 2. Dressings must be done at shorter intervals, though only exceptionally oftener than two, or at most three times a week. Wounds requiring a more frequent dressing than this, should receive different treatment and a different style of dressing throughout.

The dressings we have considered hitherto are such as are designed either, in closed wounds, to repress and confine secretions, or, in open aseptic wounds, to carry the secretions away from the wound and expose them to rapid exsiccation in order to form a seal. The same dressings, with the two restrictions mentioned above, are also applicable to slightly infected wounds, to carry off a moderate amount of secretion and pus into some absorbent material which will hold them and keep them for a few days from exercising any decided action deleterious to the healing process which we presume to be rapidly advancing in the wound.

In these mildly infected cases the judgment of the dresser must strike the balance in each particular case between the danger, delay and disadvantage to the patient arising from an unnecessary renewal of the dressings and the probability of allowing a bland and perhaps only superficial suppurative process to become more virulent through too long contact of dressings containing some slight amount of septic matter with the granulating surface of the wound. From what I have observed of surgical work in this and other hospitals, dressings in these cases are done far more frequently here than my judgment would commend. A wound needs rest and opportunity for repair fully as much as it needs cleansing from pus, and my experience with surgical dressings leads me to believe that dressing once, twice, or exceptionally, three times a week in many cases that here are dressed

<sup>\*</sup>Gerster, Op. cit., p. 13.

every day, or every two days or even twice a day, would result in great advantage to the patients, to the hospital, and to the dressers.

The removal of the dressing, be it done never so carefully, is a source of injury to the wound. Some of the delicate granulations are much more injured by the exposure to change of temperature, by the irrigation, and by the mopping, than by the contact with a few drops of bland pus. The dressing is often unavoidably a source of fatigue, sometimes of pain to the patient and the cure is often retarded rather than hastened thereby. I will venture to predict that in this hospital, where the patients have the advantage of being under constant observation (which should allow some latitude in the matter), your successors will do far fewer dressings than are done here now.

We shall turn our attention in the next lecture to the consideration of wounds of another description, requiring a radically different form of treatment, namely, septic wounds and phlegmonous processes.

#### MODERN TREATMENT OF ACUTE URETHRITIS.\*

Edward Seymour Moulton, M.A., M.D., Clinical Assistant, Yale Medical School.

It is not to be expected that so recent a graduate would bring out anything new or startling, and it is my intention tonight to simply bring before you what is being done by others in
the treatment of urethritis. The differentiation between simple
and gonorrheal urethritis can be made absolutely only by the
microscope and even then we can only say that we have, or have
not, found the gonococcus and if not found we are not sure that
it may not be found at another examination. While it is interesting scientifically to make this differential diagnosis, practically, it is of very little importance as the treatment of urethritis
is the same whether it is simple or specific. It may be objected
that a differential diagnosis may help in determining the prognosis, but it has been my experience that nothing is more dangerous
to the reputation of a physician than to give a prognosis in re-

<sup>\*</sup>Read before the New Haven Medical Association on June 3, 1806.

gard to the time that a urethritis may last. Of much more importance than the diagnosis between gonorrheal and simple infection is that between anterior and posterior urethritis. This is of the greatest importance in both prognosis (for your own use only) and in treatment. It can be made so easily and simply and is of such great importance that it is surprising how few seem to consider it in treating their cases.

The symptoms of anterior urethritis are a burning in the penile portion during urination, a certain heaviness all of the time and chordee in some cases. The signs are a discharge from the meatus and sometimes swelling and redness about the meatus. The symptoms of posterior urethritis are a sense of pain and heaviness in the perineum and rectum, frequent and precipitant urination and pain after micturition. The signs are a discharge from the meatus and the passing of a few drops of blood at the end of urination.

The more important points, however, in the differential diagnosis are to be found in the urine. It would, perhaps, be well at this point to call up to your minds the mechanism of the urethra and bladder. When the bladder is empty the sides of both bladder and urethra are in apposition and the internal sphincter muscle is tightly contracted. As the bladder gradually fills it becomes balloon shaped, and when full enough to cause a certain pressure on the walls, the internal sphincter gradually relaxes until the posterior urethra becomes in reality a part of the bladder and whatever is in the posterior urethra in shape of discharge or shreds is mixed with the contents of the bladder.

Have the patient pass his urine in two portions: that in the first glass will contain urine as it is in the bladder plus whatever extraneous material there may be in the shape of pus or shreds in the urethra: the second glass contains the urine as it was in the bladder. If the second glass is clear and the first glass is muddy we are sure that we have no suppurative trouble in the bladder or in those organs which empty into the bladder—to wit, the ureters and kidneys, and that the morbid process is in the urethra. If the amount of urine is large and the patient has not passed urine for six or eight hours, so that the posterior urethra has become part of the bladder and has had its walls thoroughly washed by the contents of the bladder, and the second glass is clear we are safe in assuming that the turbidity of the first glass is due to trouble in the anterior urethra. When the second glass, which contains urine as it was in the bladder, is muddy, there is either pyelitis, cystitis or posterior urethritis and in

most cases the other signs and symptoms will determine whether it is posterior urethritis or not. One exception is that fine shreds in either glass with the urine clear are always from the posterior urethra.

A modification which improves this test is to inject into the anterior urethra some stain before having the patient urinate; the idea being to stain everything in the anterior urethra so that if all is not washed away into the first glass that in the second glass which comes from the anterior urethra will be stained.

Urethritis is a local disease and it seems rational to treat it locally as we do other local diseases. The local treatment consists of irrigations and other local applications. The irrigating fluids used are hot water and solutions of bichloride of mercury 1-40,000 to 1-30,000, permanganate of potassium 1-2,000 to 1-1,000, and nitrate of silver 1-2,000 to 1-200.

The solutions which have proven most effectual have been those of permanganate of potassium and of nitrate of silver. The usual method of irrigating is, in treating posterior urethritis, to pass a well-lubricated soft-rubber catheter to the bladder and after filling that viscus to remove the instrument and allow the patient to irrigate his own urethra by the act of urination. In anterior urethritis the catheter is only passed to the "cut off" muscle, then the fluid is turned on and allowed to escape along the sides of the instrument. In this connection I wish to emphasize the fact that the lubricant must be such that it will be easily washed away so that the solution can get at the mucous membrane. Vaseline is one of the worst lubricants, because it forms a coating on the mucous membrane which is very hard to wash off. A solution of boro-glyceride in glycerine seems to be one of the best lubricants for this purpose. Certain practitioners prefer to irrigate both the anterior and posterior urethra from the meatus. For this purpose various nozzles have been de-The nozzle is placed in the meatus and the meatus is compressed tightly about it and the fluid is forced back by a hydrostatic pressure of from three to five feet. By varying the amount of pressure they can fill the bladder or simply force to the external sphincter, depending on whether they are treating an anterior or a posterior urethritis.

The question of which is the best way to irrigate is as yet undecided, the advocates of each method claiming that theirs is the best. 'The whole question rests on which method does the least harm and reaches the entire mucous membrane the most

thoroughly. Personally, I favor the soft rubber catheter, as it certainly causes the least pain and the results are good. Whether we are treating anterior or posterior urethritis, the urethra should be irrigated at least once a day, but it is better still to irrigate both morning and night. The various advocates of this treatment give statistics and quote special cases which vary in regard to the length of time necessary for cure from three days to six weeks, but anything can be proven by statistics, and I shall not quote any in this paper. The results of this treatment which I have observed in my private practice and in two large genito-urinary clinics in New York, have been that, in anterior urethritis the discharge, instead of becoming more profuse as in the old expectant treatment, becomes watery quite rapidly, the ardor urinæ disappears largely after a very few treatments, and chordee is not so liable to occur. In posterior urethritis the frequency and precipitation in urinating becomes better almost from the first, such complications as epidydimitis and buboes are very rare, and the urine gradually clears up. In regard to the time of cure I think from three to six weeks to be a very conservative estimate, although of course, we have some cases of posterior urethritis which hang on for years.

At the Out-Patient Department of Roosevelt Hospital we use as a routine practice the internal administration of five grains of salol every three hours in both anterior and posterior urethritis and we think that it does good.

The opponents of the irrigation treatment claim that any instrumentation of an inflamed urethra does harm and therefore to irrigate in the acute stage is wrong. That instrumentation in an acute urethritis does a certain amount of harm cannot be denied, but I think it is the consensus of opinion of those who have faithfully tried the irrigation treatment that it does vastly more good than harm. There is occasionally a case where the mucous membrane and the patient are so excessively irritable that the harm done is greater than the good, and in such cases we must fall back on the old treatment, although some prefer to allay the irritation by the use of cocaine. There are a certain number of cases where the posterior inflammation seems not to yield promptly to the irrigation treatment alone, and in many of such cases in the second and third week of treatment the injection of nitrate of silver with a Keyes-Ultzmann urethral syringe every other day after the irrigation does a great deal of good. These deep injections should commence with the strength of two grains to one ounce, and be increased at each treatment one

or two grains until a strength of eight or ten grains to one ounce has been reached.

In cases of posterior urethritis where the tenesmus and frequency of urination is very great and the patient is passing blood the introduction of rectal suppositories, containing one-fourth of a grain of morphine and one-eighth of a grain of extract of belladonna three times a day, seems to relieve the condition more quickly than anything else. Anterior urethritis, posterior urethritis and their complications, should always be treated in the order inverse to that in which they are named. In a case in which both anterior and posterior urethritis is present any treatment directed simply to anterior urethra such as injections, etc., seems to aggravate the posterior trouble and not to benefit very greatly the anterior, while on the other hand all treatment directed toward the posterior trouble benefits the anterior as well as the posterior trouble and it is for this reason that I laid so much stress on the differential diagnosis.

I have not attempted to take up the subject of chronic urethritis or gleet, for the subject is so large that I should take up too much of your time as well as wear out your patience.

252 YORK STREET.

# YALE MEDICAL JOURNAL

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It is extremely commonplace nowadays to call attention to the fact that only the current medical literature embodies the most advanced and scientific medicine. Yet that fact cannot be too often or too forcibly impressed upon the minds of students. Some practitioners even seem oblivious to it. Frequently, for a good portion of their school career, medical students overlook or disregard the important part which professional journals play in the advancement of medicine.

In view of the importance of the press in medicine the professional schools do well to support school papers. Through a school paper the students first get a keener interest in medicine, are stimulated to, and learn the value of, a wide range of medical reading. It encourages contributions from them—efforts which must begin sooner or later in every practitioner's life. By virtue of their peculiar relation to it, they are led to a realization of the duty of practitioners to the general medical press. It becomes, at once, an attractive and an efficient means of giving journalistic practice and of awakening and formulating valuable ideas. In short, it first shows in an intelligent way the general professional literature and its service to medicine at large, and, by the training it affords, enables young practitioners to employ this press the more ably as a means of cooperation with their fellows.

If a school paper accomplished no more than this its maintenance would be justified. The JOURNAL now entering upon the third year of existence is desirous of doing this in an efficient manner.

\* \_ \*

During August the City of New Haven was visited by an epidemic of typhoid fever, and although it has been impossible to record all the cases, a very conservative estimate places the number at about one hundred. While this epidemic was by no means so severe as that in Stamford last year, which furnished upwards of four hundred cases, yet it was the second largest epidemic of typhoid in Connecticut in recent years and they both present many characteristics in common. Nearly all the cases occurred in one ward of the city and the greater number of cases were in families the milk supply of which was derived from the same source. An investigation as to the cause of infection seemed to point to the milk supply, and upon inquiry at the farms from which the milk was obtained the presence of what was called malarial fever was shown. There were four cases of this "malarial fever," and across the road a typical case of typhoid. One of these cases assisted at the milking and the washings of the house were thrown upon the ground whose natural drainage ran into a well from which water was obtained An examination of this water showed it unfit to wash the cans. for use.

Whatever may have been the exact source of contamination to the milk need not be discussed here. There was existing at this farm and in handling this milk such a condition of affairs that it would be impossible not to have the milk contaminated. That it was the milk that was the cause of the epidemic there cannot be the slightest doubt. Almost everyone who came in close contact with the milk became a victim to its disease producing germs. In certain families where some members were accustomed to partake largely of milk while others did not use it at all, the milk drinkers almost invariably succumbed. In ten days after the source of the milk supply to this milkman was stopped and he began to get his milk elsewhere there was not a new case of typhoid fever in this locality. The circumstances connected with this epidemic are worthy of consideration. Where so important an article of daily consumption as milk is allowed to become the source of pathogenic infection the possibilities are fearful to contemplate. As the law now exists, if the specific gravity of milk reaches a certain standard it becomes an

article of commerce, no attention being taken of the fact that the milk may teem with disease germs and still furnish the requisite amount of solids. Our laws are plainly inadequate on this point and the only logical remedy, one to which we must come sometime, is the granting of licenses to milkmen and milk producers. We license the junkman to be certain that he conducts his business in a sanitary manner. Why should we not observe the same precautions with the milkman? Under this system if a legally organized commission finds that stated precautions are observed in obtaining and caring for milk they can furnish licenses. If all laws of hygiene and sanitation are violated public safety demands that the guilty ones suffer.

## MEDICAL SOCIETY REPORTS.

New Haven Medical Association.—This Society held its regular monthly meeting Wednesday evening, September 2d, at the Graduates Club, President Mailhouse presiding.

Dr. Osborne reported the following case: He was called two weeks ago to see a woman, seven months pregnant. It was her fourth pregnancy. Up to this time her health had been good. She complained of cramps in her stomach; bowels moved normally. The following day patient was better. Two days later a visit was made and it was found that the patient had a little more pain, had vomited some; had no œdema, although some blurring of the eyes. A specimen of the urine was examined and found to contain 75 per cent albumin. Dr. Osborne asked for a consultation but the patient and her friends did not think it necessary. Dr. B. A. Cheney, however, was called in and he advised getting rid of the child at once. This was refused. The next day, patient was better, but urine was just as bad. Five days later patient was no better, and Dr. Osborne asked for another consultation. Dr. Bellosa was called in. Patient had some headache and was passing some urine. She still refused to have pregnancy interfered with. A few hours later both Dr. Osborne and Dr. Bellosa were telegraphed for, as patient was having convulsions. Labor was produced and the placenta came away without hemorrhage. Patient was comatose and urine was suppressed. She died in two days without regaining consciousness.

Dr. Tuttle stated that he had had two cases of eclampsia, both of which recovered.

The question for the evening was Typhoid vs. Remittent Fever. The discussion was opened by Dr. Fleischner.

Dr. Daggett asked for information regarding the typhoid epidemic in New Haven.

Dr. Wright said there were reported during August seventy cases, forty-three of which were in the 4th Ward. Thirty-nine cases took milk from the same milkman. Investigation proved that the milkman boarded at the house with typhoid fever patients and washed his milk-cans at the well on the premises. He also got milk from a place where a farm hand had been sick a month with so-called malarial fever and diarrhoea. The health authorities stopped this man from selling milk and the number of cases of typhoid was lessened.

The Prudential Committee reported for membership Dr. E. S. Moulton and Dr. W. F. Verdi. Both were elected.

Meeting then adjourned.

\* \* \*

LITCHFIELD COUNTY MEDICAL ASSOCIATION.—A quarterly meeting of the Litchfield County Medical Association was held at Thomaston July 14th. Besides the President and the Clerk there were seven members present. Dr. P. H. Sellew of Salisbury was received on certificate from Hartford County, and Dr. W. B. Bissell of Salisbury, J. D. Hayes of Torrington, and M. P. Robinson of Terryville, were elected members.

It was expected in April that a committee on legislation would be appointed at this meeting, but this was deemed unnecessary in view of the full consideration that had been given to the Medical Act at the meeting of the State Society in May.

The order of exercises at meetings of the Association was revised so as to give due preference to anniversary papers, papers of invited guests and the set papers of a meeting, and volunteer papers and all informal discussions.

Amendments to the By-laws were proposed to be acted upon in October whereby the annual meeting would be held in April; the annual meeting would be held at Winsted and the semiannual meeting at Litchfield.

The subject that characterized this meeting was Jenner's great work of just a hundred years ago. Dr. Goodwin gave the introductory paper. He dwelt on Jenner's character and early studies which fitted him to be the historic character that he has become; upon his patient waiting amidst ill repute and neglect

until by the triumphant public demonstration of his claims he silenced opposition and indifference. In all these labors it was no selfish motive that supported him; he was led on by the confident expectation of the great boon he would confer upon his race. Dr. Goodwin stated that on the hill just out of Thomaston, lived at the opening of this century one Dr. Fancher, who was an enthusiast in vaccinating and operated on people all about that region. They supposed the operation was original with him. In the discussion which followed allusion was made to the remark of Virchow at the festival held in Berlin that "all the peoples that have not been reached by vaccination or have not accepted it have disappeared from the face of the earth, destroyed by small pox."

A paper by Dr. Wiggin was read detailing cases of uterine retro-displacement treated by Vaginal Fixation (Mackenrodt). The author called special attention to these points in the technique; that the utero-vesical fold of the peritoneum should be divided at which the adnexa should be examined and passed upon; that the fundus should be fixed with catgut, as under this circumstance the uterus is ultimately held by adhesions only. If any non-absorbable material is used it interferes with the rising of the uterus if pregnancy ensue. The aspersions which have been cast on this operation, even in the name of Mackenrodt, were entirely discredited.

Dr. Kendall introduced two cases of traumatic epilepsy which were hopeless. Both were relieved by operation and had a future.

Other cases of brain surgery were related, one showing great tolerance of the brain to penetration, and one in which after ten days of lifelessness amendment began and recovery followed after a clot between the skull and the dura had been removed.

Dr. Johnson stated that in a case of cancer of the stomach after abandoning the use of proto-nuclein once he had returned to it in largely increased doses with benefit to the patient.

Dr. Johnson related a case of Melæna Neonatorum which began a few hours after birth. The matters were evacuated per anum.

Dr. Kendall narrated histories of three cases of Hemiplegia with appasia in youth, also a case of contusion of the cornea.

Other cases which cannot well be epitomized were related and only upon necessity for taking the train did the meeting adjourn at 4 P. M. after a session of five hours.

J. C. KENDALL, Clerk.

MIDDLESEX COUNTY MEDICAL ASSOCIATION.—The semi-annual meeting of the Middlesex County Medical Association was held by invitation of Dr. Edward P. Nichols at his residence in Killingworth, October 8, 1896.

The following fourteen members were present: Sears, Potter, Campbell, Maitland, Loveland, Edgerton, Calef, James Murphy, Coudert, Hazen, Bloomfield, Reynolds, Nichols, Hallock. Dr. F. W. Braman, ex-President of the State Society, was present as a delegate from New London County.

The meeting was called to order by the President, Dr. Francis D. Edgerton, at 12 o'clock. The minutes of the last semi-annual meeting were read and approved.

The Chair appointed Drs. Hazen, Hallock and Calef a committee on "Subject for Discussion."

Dr. F. N. Braman was welcomed as delegate from the New London County Medical Association, and in response extended greetings from his society and congratulated our County Society on the active interest shown by the gathering of so many members at such a remote point as the residence of Dr. Nichols.

A letter from Dr. J. C. Kendall sending greetings from Litchfield County Association, was read by the clerk.

The Dissertator, Dr. A. J. Campbell, read his paper entitled "The Lancet: Its Uses, etc." Dr. J. E. Loveland opened the discussion of this subject and gave a resume of the indications for venesection.

Dr. Coudert related a case of pneumonia in which bloodletting had been of distinct advantage.

Dr. Calef reported cases of gas poisoning in which this method of treatment with subsequent transfusion of saline solution was of unquestioned value.

Dr. Braman stated that his experience of venesection was not as satisfactory as with other methods, hot pack, etc.

Dr. Hazen who had bled more than any one else present, considered that in puerperal eclampsia venesection was an important means of treatment. He had bled in pleurisy with good result, he thought. In apoplexy the method had not availed.

1:00 P. M., adjourned for dinner.

3:15 P. M. Society was called to order, and on motion of Dr. Hazen, a hearty vote of thanks was given Dr. Nichols and his household for his generous entertainment.

Drs. Bloomfield and Nichols then closed the discussion on venesection after Drs. Sears, Potter, Maitland and Murphy had expressed their views.

On the suggestion of the President the experience of those present was summed up as follows: The number of doctors practicing venesection in pneumonia was one; in puerperal convulsions, four; in apoplexy, four; in gas poisoning, two; acute pleurisy, two; habitual bleeding, three. Number of cases bled: Nichols, four; Sears, six; Calef, four; Hazen, twelve; Braman, six; Campbell, one; Coudert, six; Edgerton, five; total, forty-four cases.

The aggregate years of practice of all physicians present, 274. Committee on "Subject for Discussion" reported subject to be "Pneumonia." Dr. Hazen to be dissertator on its treatment; Dr. Calef to speak of its pathology, and Dr. Hallock of its nervous symptoms. Adjourned.

FRANK K. HALLOCK, Clerk.

LITCHFIELD COUNTY MEDICAL ASSOCIATION.—A stated meeting of the Litchfield County Medical Association was held at Litchfield October 13th, 1896. In spite of the very forbidding weather eleven members were present, including the President and the clerk. The By-laws were amended so as to hold the annual meeting at Winsted the fourth Tuesday in April, and the semi-annual meeting at Litchfield the second Tuesday in October. An amendment was proposed in the By-laws so that the clerk shall be ex-officio a member of the nominating committee. The clerk was excused from reporting the meetings of the Association in the Litchfield paper on the ground that it is now considered to be not in good taste and usage to report professional matters in non-professional publications. In the year 1832 when the rule was passed the opinions concerning such usage were different.

The leading feature in this meeting was the celebration of the fiftieth anniversary of the public demonstration of the use of anæsthetics in surgery. The President gave the paper. He reviewed the efforts of medical men as reported in both history and tradition to relieve their fellows of pain, going back to the earliest records, and the later more successful efforts to secure temporary anæsthesia since the original experiments of Sir Humphrey Davy, including the triumphant adaptations of ether by our own countryman, Morton. The President received a suitable vote of thanks for his interesting researches.

The clerk read a paper suggesting measures for securing greater efficiency and usefulness in society interests. First, in relations with the State Society. It was proposed that only members actually present at the annual meeting and signifying their expectation to attend the meeting of the President and Fellows be appointed fellows. The records for ten years show that out of an appointment of fifty fellows only twenty-one attended the meetings.

The second part of the paper was a plea for greater participation by members in the professional exercises of the meetings by presentation of studied formal papers. It was argued that the successful meeting depends upon an enticing program not the social relations and the dinner. Members were urged to be on the watch for material to offer at the meetings, to put it in writing at the time it was observed, to announce to the President their expectation to read the papers, and to send them to be read by the clerk if they were prevented from going to the meeting; also to prepare themselves to discuss the subjects announced in the notification of the meeting. An expression of approval of the suggestions as to the fellowship was made.

The formal subject for discussion was "Treatment of Typhoid Fever." The attention of the members generally has been turned to the more recent treatment of typhoid fever. early and continued use of evacuants met no opposition; antipyretic drugs met no recommendations; intestinal antisepsis by special agents was not by most counted as important; the only remarks on milk diet discouraged large quantities for the day; the use of turpentine in intestinal hemorrhage was recommended; the use of ergot in such hemorrhage was agreed as inapplicable; indeed, one member had a profuse hemorrhage during a protracted use of ergot following a previous lighter hemorrhage. It was rejoined that the ergot ought to have been administered by the hypodermic syringe; nitroglycerin in hemorrhage was recommended; the subject of baths was not touched. question was raised, "If the cases treated by the late current methods and recovered with less severe courses of sickness in shorter time and with so much higher percentage of recoveries are not typhoid fever, especially when they are only a portion of a given household in which other members otherwise treated are longer and more severely sick and die in higher ratio, what are they?" No one presumed to answer.

Dr. Barton, who has been studying at the Massachusetts General Hospital at Boston, gave a description of the current treatment of typhoid there. The features additional to those brought out in the discussion were: the forced reduction of body heat whenever it reached 102° by sponge bathing with water of

80° reduced to 70°; taking of the temperature every hour; daily watch of the heart and care to keep up its action; guarding against ear complications by assiduous use of mouth washes, a glass of sterilized milk every two hours; no solid food until temperature has remained normal a week; no antipyretic drugs; no intestinal antiseptic drugs, as elaborate study of the evacuations discovers no impression made by such drugs. The point of immunity conferred by an attack of fever was noticed, also the inherent immunity ascribed to infancy. The records of the Stamford epidemic of 1895 in the latter point were referred to. Out of 406 cases there were only four under two years of age.

The afternoon was so far advanced that it was necessary to postpone the rest of the program.

The next meeting is appointed for Jan. 12, 1897, at Winsted.

J. C. Kendall, Clerk.

In reporting the Litchfield County Medical Meeting of April 28th, an omission was made which we now gladly correct. June issue, page 335 reads, "The President, Dr. Pratt, illustrated the use of morphia to quell eclamptic convulsions," should read, "illustrated the use of veratrum viride with morphia to control eclamptic convulsions."—Eps.

## ITEMS OF INTEREST.

The county health officers of Connecticut met at the office of Dr. C. A. Lindsley recently and decided to change the monthly health reports so as to make them more comprehensive and to substitute a text report for the old tabulated one. Hereafter the reports will be published in the town records.

Typhoid fever has been prevalent in New Haven since August. The map of the Board of Health shows that the disease was most prevalent in the Fourth Ward.

Dr. Salzmann of Essling, Germany, has made researches concerning the longevity of physicians and finds: In the sixteenth century the average age was thirty-six years and five months; in the seventeenth century, forty-five years and eight months; in the eighteenth century, forty-nine years and eight months, and in the present century, fifty-six years and seven months.

The United States Bureau of Education has issued a report concerning professional education in the United States from which the following is taken: The students in regular medical schools in 1883-'84 numbered 10,600; in 1893-94 they numbered 17,601, an increase of sixty-six per cent. Students in homœopathic schools in 1883-'84 were 1,267; in 1893-'94, 1,666, an increase of 31.5 per cent. The eclectic students numbered about the same for the two periods—767 in 1883-'84, and 803 in 1893-'94, an increase of only 4.7 per cent. The number of regular medical students increased more than twice as fast as homœopathic students and more than fourteen times as fast as the eclectics.

The new infirmary at Amherst College, the gift of George D. Pratt of Brooklyn, will be completed by March 1st, and is to cost \$17,000.

The Hull gift of \$1,000,000 for biological laboratories for the University of Chicago has been supplemented by the offer of \$500,000 worth of property for a biological station to be situated at Peoria, Ill. The donors are Mrs. Edward Roby, E. A. Shedd and C. B. Shedd.

The Mortality Report for September has been received from one hundred and sixty-four towns in the State. There were 1,188 deaths reported during the month. This was 456 less than in August, and 61 more than the average number of deaths in September for the five years preceding the present. The death rate was 16.8 for the large towns; for the small towns 16.6, and for the whole State 16.7. The deaths from zymotic diseases were 307, being 25.8 per cent of the total mortality. The following number of cases of infectious diseases were reported to the office of the health officers: Measles 24, scarlet fever 107, diphtheria and croup 102, whooping cough 25, typhoid fever 249.

#### REGISTERED PRACTITIONERS IN CONNECTICUT.

FROM JUNE 15TH TO OCTOBER 15TH, 1896.

| Name.                    | Basis of Registration.       | Where Registered.   |  |  |  |  |
|--------------------------|------------------------------|---------------------|--|--|--|--|
| Harriet E. Tracy, M.D.   | N. Y. Med. Coll. and Hosp.   | for Wom. Greenwich. |  |  |  |  |
| Harry W. Flick, M.D.     | Jefferson Med. Coll., Phila. | Greenwich.          |  |  |  |  |
| Frederick L. Hayes, M.D. | Jefferson Med. Coll., Phila. | Enfield.            |  |  |  |  |
| los. B. Burroughs, M.D.  | Syracuse Med. Coll.          | Bridgeport.         |  |  |  |  |
| Chas. J. Bartlett, M.D.  | Yale Univ. Med. Dept.        | New Haven.          |  |  |  |  |
| Emma J. Thompson, M.D.   | Wom. Med. Coll., N. Y.       | East Haddam.        |  |  |  |  |
| Daniel J. Maloney, M.D.  | Univ. of N. Y.               | Waterbury.          |  |  |  |  |

S. Busey Allen, M.D. Albert M. Vansickle, M.D. John J. Gilhulv, M.D. Ella V. Cameron, M.D. George E. Porter, M.D. Fred. A. White, M.D. Geo. M. Muren. M.D. Chas. W. Jackson, M.D. Chas. W. Holbrook, M.D. Thos. L. Ellis, M.D. James S. Maher, M.D. Michael J. Sheahan, M.D. Isaac M. Heller, M.D. Albert A. Toms. M.D. Frank M. Tiffany, M.D. Howard F. Smith, M.D. Edw. R. Maloney, M.D.

Bellevue Hosp. Coll., N. Y. Phys. and Surg., N. Y. Bellevue Hosp. and Coll., N. Y. Eclectic Med. Coll., N. Y. Dartmouth Med. Coll. Jeff. Med. Coll. Pa. Long Island Coll. Hosp. N. Y. Univ. Med. Dept. Yale Univ. Med. Dept. Eclectic Med. Coll. N. Y. Univ. of Penn. Yale Univ. Med. Dept. Coll. Phys. and Surg., N. Y.

Greenwich. Greenwich. Bridgeport. Greenwich. Salisbury. Greenwich. Greenwich. Greenwich. East Haven. New Haven. New Haven. New Haven. New Haven. Stamford. Stamford. Hartford. Norwich.

#### PRACTITIONERS REGISTERED IN JULY.

Name. Egbert L. Smith, M.D. Luther H. Wood, M.D. Hugh C. Thompson, M.D. Clifford A. Kellogg, M.D. Milo H. Jones, M.D. Chas. R. Jackson, M.D. Larmon W. Abbott, M.D. Robert E. Perdue, M.D. Jas. R. Whiting, Jr., M.D. Theo. E. Beard, Jr. William E. Cramm, M.D. Henry E. Russigue, M.D. James L. Moriarty, M.D. James J. Donohue, M.D. Arthur I. Boyer, M.D. Adolph A. Bankowsky, M.D. Eclectic Med. Coll., N. Y. John P. Greene, M.D. Harry E. Higgins, M.D. John O. Garmon, M.D. Geo. E. Evans, M.D. Geo. D. Bleything, M.D. Grace C. Schermerhorn, M. D. Wom. Med. Coll., Phila. Henry C. Macy, M.D. Chas. C. Zacharias, M.D. Geo. E. Myers, M.D. Celista E. Luther, M.D. Vincent J. Irwin, M.D. Ormoy L. Massinger, M.D. Isidor Nadle, M.D. Helen A. Lord, M.D. Geo. E. Manver, M.D.

Basis of Registration. Yale Univ. Med. Dept. Sterling Med. Coll., O. Jeff. Med. Coll. Exam. by Conn. Med. Soc. Univ. of Vermont. Boston Univ. School of Med. Harvard Med. School. Exam. by Conn. Med. Soc. Med. Dept. Univ. of Vt. Bellevue Med. Coll., N. Y. Univ. Med. Dept., N. Y. Univ. of Mich. N. Y. Homœ. Med. Coll. Columbia Coll., Med. Dept. Bellevue Hosp. Med. Coll., N. Y. Coll. Phys. and Surg., N. Y. Univ. of Vt. Med. Dept. Wom. Med. Coll., Penn. Univ. of Vt., Med. Dept. Jeff. Med. Coll. Jeff. Med. Coll. Wom. Med. Coll., Penn. N. Y. Univ.

Where Registered. Woodbury. Orange. New Haven. New Haven. Greenwich. Greenwich. Bridgeport. Southport. Salisbury. New Haven. Greenwich. Hartford, Norwich. Norwich. New Haven. Greenwich. Greenwich. Norwich. Thompson. New Haven. Greenwich. Greenwich. Greenwich. Greenwich. Killingly. Clinton. Enfield. Greenwich. Greenwich. Suffield. Greenwich.

#### PRACTITIONERS REGISTERED IN AUGUST.

| Name.                    | Basis of Registration.        | Where Registered. |
|--------------------------|-------------------------------|-------------------|
| Sanford Wadhams, M.D.    | Yale Univ. Med. Dept.         | Norwich.          |
| Harry M. Hartung, M.D.   | Yale Univ. Med. Dept.         | New Haven.        |
| Louis M. Gompertz, M.D.  | Yale Univ. Med. Dept.         | New Haven.        |
| Allen R. Defendorf, M.D. | Yale Univ. Med. Dept.         | New Haven.        |
| John L. Keliey, M.D.     | Yale Univ. Med. Dept.         | New Britain.      |
| Fred. S. Waterbury, M.D. | Hosp. Coll. Med., Louisville. | New Haven.        |
| Wm. H. Bowlsby, M.D.     | Eclectic Med. Coll., N. Y.    | Greenwich.        |
| Alice M. Seabrooke, M.D. | Wom. Med. Coll., Phila.       | Greenwich.        |
| Adolfo Luria, M.D.       | Coll. of P. and S., Chicago.  | Salisbury.        |
| Michael F. McGuire, M.D. | Univ. of Vt.                  | Salisbury.        |
| Chas. D. Strong, M.D.    | Long Island Coll. Hosp.       | Westbrook.        |

#### PRACTITIONERS REGISTERED IN SEPTEMBER.

| Name.                      | Basis of Registration,            | Where Registered. |
|----------------------------|-----------------------------------|-------------------|
| James H. Stewart, M.D.     | N. Y. Homæ. Med. Coll.            | Greenwich.        |
| Calvin L. Lenox, M.D.      | Univ. of Vt.                      | Colebrook.        |
| Thomas N. Gray, M.D.       | Coll. Phys. and Surg., N. Y.      | Bridgeport.       |
| Paul B. Kennedy, M.D.      | Bellevue Hosp. Med. Coll.         | Derby.            |
| Peter V. Burnett, M.D.     | Med. Dept. Univ. of N. Y.         | Greenwich.        |
| Hattie L. Knox, M.D.       | Wom. Med. Coll., N. Y. Inf'y.     | Greenwich.        |
| Philip P. Carbor, M.D.     | Univ. Med. Coll., N. Y.           | Greenwich.        |
| George Roberts, M.D.       | Univ. of Vt.                      | Hartford.         |
| Wm. P. Cator, M.D.         | Exam. by Conn. Med. Soc.          | New Britain.      |
| Hayward Scudder, M.D.      | Coll. Phys. and Surg., Cal. Univ. | Greenwich.        |
| John D. Gilbert, Jr., M.D. | Coll. Phys. and Surg., Chicago.   | Stratford.        |
| Edwin N. Dougherty, M.D.   | Univ. of N. Y. Med. Dept.         | Waterbury.        |
| Thomas J. Kilmartin, M.D.  | Univ. State of N. Y.              | Waterbury.        |
| Chas. S. Goodwin, M.D.     | Univ. City of N. Y.               | Waterbury.        |
| James B. McCook, M.D.      | Columbia Phys. and Surgs.         | Hartford.         |
| Louis A. Maynard, M.D.     | Univ. of Vt.                      | Hartford.         |
| Thomas W. Chester, M.D.    | Coll. Phys. and Surg., N. Y.      | Hartford.         |
| Geo. P. Swift, M.D.        | Boston Univ. School of Med.       | Greenwich.        |
| Wallace W. Colby, M.D.     | Bellevue Hosp. Med. Coll.         | Greenwich.        |
| John W. Morgan, M.D.       | Med. Dept. Columbia Univ.         | Greenwich.        |

# BOOK REVIEWS.

Manual of Obstetric Accidents, Emergencies and Operations. By L. Ch. Boisliniere, A.M., M.D., LL.D.

A manual so useful to the student or the general practitioner, who has need of refreshing his memory quickly, has not been brought to our notice in a long time. The field embraced in the title is well covered in a terse, interesting way, interspersed with

just enough reports of cases to illustrate the author's views. The late Dr. Boisliniere has drawn his conclusions from a long and honorable career as a gynæcologist, and in the main his opinions are in harmony with those of a considerable list of well-known authorities, whom he quotes, including such names as Lusk, Cazeaux, Charpentier and Playfair. In the sections on accidents to the mother the chapter on puerperal convulsions is worthy of special notice. This distressing accident is admirably discussed and condensed within a few pages, and contains a great deal of hard common sense. While not pretending to be a complete treatise this chapter is more satisfactory than some much more pretentious articles on eclampsia. Among the chapters on operative work that dealing with symphyseotomy is especially inter-The numerous illustrations are beautifully executed and are, without exception, valuable studies. We note also that the new orthography has been adopted in this work, viz., morphin, quinin pilocarpin, etc. The book will doubtless receive a warm welcome as an epitome of the art and science of obstetrics applied to abnormal cases. F. W. P.

Anthropometry and Physical Examination. By Jay W. Seaver, M.A., M.D. Published by The O. A. Dorman Co., New Haven, Conn.

The purpose of the second edition of this book is the same as the first; that is, to furnish directors of gymnasia who examine people and prescribe exercise, with a guide in securing measurements and in pointing out vital matters in making a physical diagnosis. The part on anthropometry has been re-written and more of the history of anthropometry added. A valuable improvement has been made under the part "What to Measure and How to Measure," by adding half-tone cuts of the exact way of taking measurements as the Doctor himself does at the Yale Gymnasium. A number of special instruments have been added; also a number of graphic charts showing the marked improvement as shown by measurements of students at Yale, Amherst, Harvard, Wellesley and other colleges. It is altogether the most satisfactory book we have seen on the subject and is both suitable as a text book and as a book of reference.

Practical Points in Nursing for Nurses in Private Practice. By Emily A. M. Stoney. W. B. Saunders, Publisher, Philadelphia, 1896.

As indicated in its title, this concise but yet complete little

book is designed mainly to bring before graduate nurses the latest devices and practices of their profession. The subject matter is based on a series of lectures delivered before the Carney Training School for Nurses of which the author is Superintendent. The text is divided into several chapters, the most interesting of which perhaps are those on "Nursing in Accidents and Emergencies," and a digest of Physiology and Descriptive Anatomy. It would be well if every nurse were intimately acquainted with the former. The book contains also a Glossary of about 6,000 of the most common medical and nursing words and phrases. It has as well a complete dose list, and a chapter on general rules to be followed in feeding the sick. Numerous illustrations are scattered throughout the book and prove serviceable aids to the understanding of various methods of treatment. The book would be of great service also to the "home" nurse who would be somewhat scientific in her method, as it is written in plain language and easily comprehended.

# BOOK NOTICES.

System of Surgery. Dennis. Vol. IV. Tumors, Hernia, Alimentary Canal, and Abdomen, Female Genitals, Breast. Published by Lea Brothers & Co., New York and Philadelphia, 1896.

Twentieth Century Practice of Medicine. Vol. VIII. Diseases of the digestive organs. Edited by Thomas L. Stedman, M.D. William Wood & Company, Publishers.

An American Text-Book of Physiology. Edited by William H. Howell, Ph.D., M.D., Professor of Physiology in the Johns Hopkins University, Baltimore, Md. Published by W. B. Saunders, Philadelphia, 1896.

Diet for the Sick. Contributed by Miss E. Hibbard, Principal of Nurses, Training School, Grace Hospital, Detroit, and Mrs. Emma Dean, Matron of Michigan College of Medicine. Published by The Illustrated Medical Journal Company.

Bulletin of the Harvard Medical Alumni Association. Report of the Sixth Annual Meeting held in Boston June 23, 1896. Published by the Association.

Report of State Board of Health. 1895.

Manual of Obstetrics. By W. A. N. Dorland, A.M., M.D., Assistant Demonstrator of Obstetrics, University of Pennsylvania, Philadelphia. W. B. Saunders, Publisher.

A Text-book for Training Schools for Nurses. By P. M. Wise, M.D., Medical Superintendent of St. Laurence State Hospital. In two volumes. Vol. I. Publisher, G. P. Putnam's Sons, New York and London, 1896.

# MEDICAL PROGRESS.

Menstruation in the Eskimo.—(Boston Med. and Sur. Journal, Sept. 1896.) Dr. Cook, who was with the Peary expedition, reports that the Eskimo girls do not begin menstruating until they are 18 or 20 years old. It has, however, been stated that they may conceive and bear children at a much younger age, a fact which has been adduced to show that there is no necessary connection between ovulation and menstruation.

IS MITRAL REGURGITATION FROM VALVULAR DISEASE COM-MON OR SERIOUS?—(American Medico-Surgical Journal.) It is not an uncommon occurrence to hear a systolic murmur at the apex of the heart during first attacks of rheumatism, and we may not be justified in saying that endocarditis is present, caused by deformity of the flaps of the mitral valve. It must take some time for deformity of the valve to develop, so in these suddenly occurring murmurs it is more reasonable to suppose that dilatation of the left ventricle has occurred. Dr. Fisher states that dilatation of the left ventrical occurring during attacks of rheumatism, while probably sufficient in amount to give rise to a systolic apex murmur, need not necessarily be so great as to give definite signs of its existence at the bedside. The frequent presence of a systolic murmur audible over the pulmonary area can hardly be ascribed to endocarditis of the pulmonary valves. Dr. Foxwell ascribes the occurrence of this pulmonary systolic murmur to the dilatation of the right ventricle, mainly in the region of the conus arteriosus. In twenty years of the Bristol Royal Infirmary and ten years of Guy's Hospital post mortem records, there were found respectively forty-five and sixty-two cases of deaths from mitral stenosis, during the same periods that there were eleven and five cases respectively of mitral regurgitation, due to valvular disease. It seems that mitral stenosis is the almost invariable result of inflammation of the mitral valve, and that cases in which it may at first be thought that there is some deformity of the flaps causing the regurgitation, on more careful examination they prove to be examples of other forms of disease of the heart, possibly of the heart muscle.

ACEPHALOUS INFANTS.—(Lancet, Sept. 12, 1896). Mahon, L.S.A., reports two cases in the September Lancet. both the acephalous child was one of twins, the normal child being born first, the other following in about five minutes. the first case the mother was a primipara, about twenty years of age. The normal child being born contrary to the presentation diagnosed, while the second child was born with the base of the skull presenting. The only sign of life in the latter was a slight convulsive movement of the body. The skull was not developed above the base; upper parts of both orbits were absent, the eves being covered by the lids only. The lower part of face was quite normal, as was the child in other respects. The normally formed child was living and healthy. In the second case the mother was a multipara of age about thirty-five years. She had never had twins before; her other children were healthy and without any deformity. In this case also the first child was healthy and living. In the second one the upper part of the skull was undeveloped as in the first case. The body was that of a healthy normal child. There were no signs of life. neither of these cases was there any history of injury or fright to the mother, nor had it occurred to the author that these might be cases of intra-uterine amputation, but rather arrested development from some cause, perhaps the pressure of the other fœtus.

A SIMPLE CURE FOR INSOMNIA.—The Indian Lancet suggests the following as a ready means of inducing sleep: "Natures' plan for curing insomnia is to limit the supply of oxygen to the blood, as the cat and dog bury their noses in some soft hollow in their hair or fur, birds put their heads under their wings and soon fall asleep. Those suffering from insomnia should cover their heads with the bedclothes, breathe and re-breathe only the respired air; when drowsiness is produced sleep quickly follows, and the bed covering may be pushed aside and as much fresh air obtained as is needed." The scientific basis for the above

idea no doubt lies in the fact that a certain degree of cerebral insomnia is requisite in the production of sleep. It is well known experimentally that dogs deprived of their normal cerebral blood supply by ligation of the carotid and vertebral arteries are afflicted with an intense drowsiness, so great that they readily fall asleep under most adverse conditions and are aroused with much difficulty. Practically there might be some difficulty carrying out the plan suggested, but theoretically the soundness of the idea cannot be questioned.

# ALUMNI AND SCHOOL NOTES.

The following additions and changes in the Faculty of the Yale Medical School appear in the preliminary list of officers and students: Edward S. Moulton, M.D., Assistant in the Medical Clinic; Charles J. Bartlett, M.D., has been advanced from Assistant in Pathology to Instructor in Pathology; Ernst H. Arnold, M.D., Clinical Assistant in Orthopædic Surgery; Frederick N. Sperry, M.D., Assistant in the Medical Clinic; Harry A. Elcock, M.D., Assistant in the Throat and Ear Clinic; Ambrose K. Brennan, M.D., Assistant in Obstetrics and Pædiatrics; William F. Verdi, M.D., Assistant in Obstetrics and Gynecology.

The annual business meeting of the Yale Medical Alumni Association was held on Tuesday evening, June 23d, and the following officers were elected for the ensuing year: President, O. T. Osborn, '84; Vice-Presidents, H. B. Ferris, '90, C. P. Lindsley, '78, C. W. Kellogg, '96, F. C. Bishop, '95, John Yale, '41; Chairman of the Executive Committee, C. J. Bartlett, '95; Secretary and Treasurer, R. A. McDonnell, '92.

- 1831. Chauncey Ayres, M.D., of Stamford, Conn, is said to be the oldest living graduate of the Yale Medical School. He was born in 1808, and was a member of the class of 1831.
- 1878. Dudley A. Sargent, M.D., Director of the Hemenway Gymnasium of Harvard University, read a paper on the "Introduction of Military Drill in Our Schools" at the National Teachers' Association held in Buffalo, July 8-11.

- 1880. Jay W. Seaver, M.D., Associate Director of the Yale Gymnasium, has published a new edition of his book on Anthropometry and Physical Examination.
- 1892. Matthew Kenna, M.D., has opened an office at 102 Lyon street, New Haven, Conn.
- 1892. Among the translators of the "General Pathology," by Dr. Ernst Ziegler, published by William Wood & Co., New York, 1896, are two alumni of the Yale Medical School. Section III., "Disturbance in the Circulation of the Blood and of the Lymph," was translated by Dr. Leonard Woolsey Bacon, Jr., of New Haven, Conn.; Section XI., "The Animal Parasites," was translated by Dr. R. A. McDonnell of New Haven, Conn.
- 1893. Morris D. Slattery, M.D., has his office on Howard avenue, New Haven, Conn.
- 1893. Robert E. Peck, M.D., goes to New York City weekly and is doing special work in nervous diseases with Drs. Dana and Collins.
- 1893. Dr. Wurtemberg has been coaching the Yale eleven for the past few days.
- 1894. E. S. Moulton, M.D., is doing special work at the Roosevelt Hospital, New York City, in the Genito-Urinary Clinic.
- 1894. S. P. Goodhart, M.D., has located at 130 East 60th street, New York City, and is doing clinical work at the Vander-bilt Clinic under Dr. Starr and at the Poly-Clinic with Dr. Sach.
- 1894. F. Horst R. Oertel, M.D., has gone to Europe for the further study of his profession.
- 1894. E. S. Moulton, M.D., has moved his office to 252 York street, New Haven, Conn.
- 1894. Hermann E. Arnold, M.D., has been elected Director of the Anderson Gymnasium, New Haven, Conn.
- 1895. William J. Sheehan, M.D., sailed from Liverpool Saturday, the 24th of October.
- 1895. F. C. Bishop, M.D., has opened an office at 1223 Chapel street, New Haven, Conn.
- 1895. J. H. J. Flynn, M.D., completes his term of service at the New Haven Hospital November 15th, and is succeeded by S. H. Wadhams, M.D., '96, whose term will last sixteen months.

- 1895. L. Smirnow, M.D., has an office at 38 Elm street, New Haven, Conn.
- 1896. S. H. Wadhams and L. W. Abbott graduated "cum laude."
- 1896. A. R. Defendorf received the Keese Prize, which is awarded for the best thesis.
- 1896. C. W. Kellogg received the Campbell Gold Medal for the highest rank in the examinations of the course.
- 1896. S. M. Hammond assisted Dr. Wm. C. Welch of New Haven during the Summer.
- 1896. Louis M. Gompertz, M.D., who took Dr. Klenke's place in the Dispensary while he was on his vacation this Summer, has located in New Haven, at 587 State street.
- 1896. C. W. Kellogg, M.D., has his office at 135 Dwight street, New Haven, Conn.
- 1896. I. M. Heller, M.D., is taking a course of post-graduate study under Dr. Elliott of New York City.
- 1896. H. C. Thompson, M.D., has gone to Detroit, Mich., where he expects to open an office.
- 1896. T. L. Ellis, M.D., did not finish his term of service at the Maternity Hospital, corner 17th street and Second avenue, New York, but began a term of service at the Bridgeport City Hospital September 15th.
  - 1897. J. L. Allen has entered McGill University.
- 1897. All of the "two year men" who took the examinations last June have been admitted to the Senior class.
- 1897. The following men have taken courses at the Broome Street Maternity Hospital, New York, during the Summer vacation: J. B. Griggs, E. K. Loveland and E. T. Smith.
- 1897. The engagement is announced of Mr. John B. Griggs, '97, to Miss Nellie Bolter of Hartford, Conn. At present Mr. Griggs is ill at his home in Hartford, with a mild form of typhoid fever.
- 1897. The following men have had charge of the Obstetrical work at the Dispensary at different times during the Summer: Allen, Briggs, Cohane, Ferris, Herrity, A. E. Loveland, Pallman, Reilly and Todd.

- 1897. A. E. Loveland, M.A., R. S. Graves, B.A., and H. L. Welch, B.A., took Summer courses at the Harvard Medical School. Dr. C. J. Bartlett also did extensive work there in Pathology.
- 1898. Hulseberg has been engaged to coach the Rosemary Hall cricket team this Fall.
- 1898. Julius H. Hurst spent his Summer vacation in Australia, and visited the hospitals in Melbourne.
- 1898. Alfred H. Hine, captain of last year's Freshman eleven, and Edward E. O'Donnell, are trying for the 'Varsity foot-ball team.
- 1898. F. J. Parker, Ph.B., assisted in the laboratory of Prof. Herbert E. Smith, Chemist of the State Board of Health, during the last vacation.

The Senior class held a meeting Thursday, October 15th, to elect officers for the ensuing year. They elected H. L. Welch as President. The meeting then adjourned. A second meeting was called by President Welch, at which F. I. Nettleton was elected Vice-President, F. H. Reilly, Secretary, and L. H. Wheeler, Treasurer. The Class Committees were then appointed by President Welch as follows: Cap and Gown—W. H. Barnes, W. M. Weaver, G. T. McMaster. Supper—F. H. Todd, R. S. Graves, S. R. Woodruff. Picture—L. H. Stewart, H. H. Briggs, E. D. Chipman.

- Ex-1898. R. S. Church, who was compelled to leave college last year on account of ill health, has entered '99.
- Dr. E. F. Horr, who attended the Yale Medical School in '91-'92 is practicing at 330 W. 57th street, New York City.
- Dr. Graham Lusk, Professor of Physiology, spent the Summer abroad, as did also M. S. Sherwood, '98.
- R. S. Goodwin, graduate of the New Haven Hospital, has gone abroad with a patient and expects to visit South Africa and Australia.

"The American Text-Book of Physiology," edited by Wm. H. Howell, Ph.D., M.D., of the Johns Hopkins University, is just from the press of W. B. Saunders, Philadelphia. Graham Lusk. Ph.D., Professor of Physiology in the Yale Medical School, has contributed the XIV. chapter, devoted to "The Chemistry of the Animal Body."

# The catalogue of medical students for the year 1896-'97:

#### SENIORS.

| Barnes, W. S., Ph.B.,     | New Haven, Conn.,    | 159 Spring St.     |
|---------------------------|----------------------|--------------------|
| Beard, T. E., Jr.,        | New Haven, Conn.,    | 163 Wooster St.    |
| Blanchard, I. D.,         | Bridgeport, Conn.,   | Bridgeport.        |
| Briggs, H. H., B.A.,      | Flag Pond, Tenn.,    | 99 Howe St.        |
| Brocksieper, J. B.,       | Montowese, Conn.     |                    |
| Chipman, E. D.,           | New Haven, Conn.,    | 49 Pine street.    |
| Cohane, T. F.             | New Haven, Conn.,    | 276 Wallace St.    |
| Cooke, J. A.,             | New Haven, Conn.,    | 121 York St.       |
| Corwin, B. F., B.A.,      | New Haven, Conn.,    | 347 Crown St.      |
| Ferris, S. J.,            | New Haven, Conn.,    | 192 Davenport Ave. |
| Graves, R. S., B.A.,      | New Haven, Conn.,    | 101 Grove St.      |
| Griggs J. B.,             | Hartford, Conn.,     | 1016 Chapel St.    |
| Kilbourn, C. L.           | New Haven, Conn.,    | 20 Woolsey St.     |
| Lee, J. A., B.A.,         | New Britain, Conn.,  | 1010 Chapel St.    |
| Littlejohn, P. D.,        | New Haven, Conn.,    | 64 Lake Place.     |
| Loeb, M. L.,              | New Haven, Conn.,    | 200 Franklin St.   |
| Loveland, A. E. M.A.,     | New Haven, Conn.,    | E. Grand Ave.      |
| Loveland, E.K., Ph.G.,    |                      | 555 Howard Ave.    |
| McGuire, F. J.,           | New Haven, Conn.,    | 244 Ferry St.      |
| McIntosh, E. F.,          | New Haven, Conn.,    | 53 Lake Place.     |
| McMaster, G. T.,          |                      | 6 High St.         |
| Nettleton, F. I., Ph. B., | Shelton, Conn.,      | 123 Park St.       |
| Pallman, T. D.,           | New Haven,           | 494 Winthrop Ave.  |
| Penn, W. F.,              | Lynchburg, Va.,      | 1016 Chapel St.    |
| Reynolds, W. G., B.A.,    | Watertown, Conn.,    | 86 Elliott St.     |
| Reilly, F. H.,            | New Haven, Conn.,    | 127 Putnam St.     |
| Smith, E. T.,             | Bridgeport, Conn.,   | 121 York St.       |
| Stewart, L. H.,           | Rutland, Vt.,        | 157 York St.       |
| Todd, F. H., Ph.B.,       | New Haven, Conn.,    | 62 Whalley Ave.    |
| Warner, G. H.,            | Baiting Hollow, N. Y | _                  |
| Weaver, G. A.,            | Manchester, N. H.,   | . 147 College St.  |
| Weaver, W. M.,            | Hartford, Conn.,     | 230 Orange St.     |
| Welch, H. L., B.A.,       | New Haven, Conn.,    | 44 College St.     |
| Wheeler, L. H.,           | Westport, Conn.,     | 295 York St.       |
| Woodruff, S. R.,          | Derby, Conn.,        | 1016 Chapel St.    |
| ,,                        | <i>3</i> , - ,       |                    |

## JUNIORS.

Billings, F. T., Washington, D. C., Bishop, L. M., Ph.B., New Haven, Conn., 71 V Brainard, C. B., Ph.B., Bristol, Conn., 191

276 Elm St. 71 Whalley Ave. 1916 Chapel St.

Broderick, F. P., Bunting, P. D., Cannon, W. T. Cobb, A. E., Cohane, J. J., Delmas, R., B.S., Dowden, T. B., Dundon, A. H., English, R. M., Guilshan, J. J., Heery, F. P., Hine, A. H., Hogan, W. J., Hulbert, R., Hulseberg, F. W., Hungerford, H. H., Hurst, J. H., Loomis, J. S., Margosian, A.D., B.A., Harpoot, Turkey, Markoe, W. W., McDermott, T. S., Munger, W. R., Nolan, F. W., Parker, F. J., Ph.B., O'Connell, T. G., O'Donnell, E. E., O'Neill, C., Perkins, J. L., Porter, L. B., Ray, W. E., Rider, C. A., Rowland, H. C., Sellew, R. C., Sherwood, M. S., Smith, C. L., Tyler, Jr., H. A., Watson, H. G., M.A., Centreville, Md., Welch, C. W.,

Jamaica Plain, Mass., 360 George St. Ellenville, N. Y., 149 Dixwell Ave. New Haven, Conn., 57 Liberty St. Norfolk, Conn., 121 York St. New Haven, Conn., 27 Haven St. New Haven, Conn., 845 Grand Ave. New Haven, Conn., 109 Wall St. Bridgeport, Conn., 1016 Chapel St. New Haven, Conn., 226 Greenwich Ave. Westfield, Mass., 63 Prospect St. New Haven, Conn., 80 Hamilton St. New Haven, Conn., 121 York St. Torrington, Conn., 163 York St. Middletown, Conn., 163 York St. London, Eng., 276 Elm St. Bristol, Conn., 240 Crown St. Colorado Springs, Col., 58 Park St. Springfield, Mass., 276 Elm St. 117 Park St. Orange, Mass., 123 Park St. New Haven, Conn., 216 Congress Ave. New London, Conn., 39 Lake Place. Springfield, Mass., 121 York St. Branford, Conn., 1161 Chapel St. Bristol, Conn., 204 Franklin St. Ansonia, Conn., Ansonia. Waterbury, Conn., 161 York St. Concord, N. H., 293 York St. New Haven, Conn., 183 Portsea St. New Haven, Conn., 201 Portsea St. West Redding, Conn., 88 Park St. Greenwich, Conn., 1161 Chapel St. Waterbury, Conn., 30 Lake Place. Pocantico Hills, N. Y., 121 York St. New Haven, Conn., 78 Trumbull St. Hartford, Conn., 402 Crown St. Yale Gymnasium. New Haven, Conn., 214 Orchard St.

#### SECOND YEAR.

Bergin, T. J., B.A., New Haven, Conn., Burnham, J. L., B.A., Springfield, Mass., ... Westchester, Pa.,

14 Daggett St. 163 York St. 138 York St. Edwards, C. P., Ivy, N. C., 119 Wall St. Foster, Dean, B.A., Medford, Okla.

Pullman, J., B.A., Bridgeport, Conn., Bridgeport. Smith, E. D., B.A., Peru, N. Y., 63 W. D. Von Tobel, A. E., B.A., Torrington, Conn., 163 York St.

#### FIRST YEAR.

Budau, J. H., Buist, G. L., B.A., Carter, Harry, Church, R. S., Clark, E. G., Clark, W. F., Clurman, S. M., Colgan, J. P., Coonley, Fred., B.A., Corbett, T. J., Costello, P. V., Dore, D. J., Dunleavy, J. J., Field, C. W., Flannery, W. J., Fuller, R. N., Griffin, C. V., Hamlin, E. F., Henze, C. W., Higgins, G. S., Hill, E. L., Hynes, T. V., Ives, J. W., Jenkins, H. E., Keefe, M. J., Kirk, W. E., Maroney, W. J., McQueen, A. S., Murray, W. L., Pitts, H. C., Pomeroy, H. S., Quinn, J. F., Snyder, C. W.,B.A.,Stetson, P. R., Stevens, F. W., Steward, H. G.,

Bridgeport. Bridgeport, Conn., 120 College St. Charleston, S. C., 287 York St. South Manchester, Conn., Bristol, R. I., 63 Prospect St. 100 Portsea St. New Haven, Conn., 402 Crown St. Mannington, W. Va., 1132 Chapel St. New Haven, Conn., New Haven, Conn., 118 Ashmun St. Port Richmond, N. Y., 333 York St. 525 East St. New Haven, Conn., 214 Franklin St. New Haven, Conn., New Haven, Conn., 21 Lines St. 14 St. John St. New Haven, Conn., Montclair, N. J., 1157 Chapel St. New Britain, Conn., New Britain. New Haven, Conn., 59 Kensington St. New London, N. H., 19 Sylvan Ave. Plantsville, Conn., 205 Crown St. New Haven, Conn., 131 West St. 554 Chapel St. Hanover, Conn., Waldoboro, Maine. S. Meriden, Conn. 88 Park St. W. Goshen, Conn., Cleveland, Ohio, 34 Kent Hall. Torrington, Conn., 163 York St. New Canaan, Conn., 25 High St. Springfield, Mass., 121 York St. New Haven, Conn., 11 1-2 Park St. New Haven, Conn., 321 Cedar St. Bristol, R. I., 373 Crown St. Willimantic, Conn., 163 York St. New Haven, Conn., 14 Anderson St. Hartford, Conn., 107 Day St. New Haven, Conn., 71 Sylvan Ave. New Haven, Conn., 178 Temple St. Bridgeport, Conn., 144 Dwight St.

| Street, George,       | New Haven, Conn., |                    |      |       |      |     |      |                | So. Quinnipiac S  |                |     |      |         |     |
|-----------------------|-------------------|--------------------|------|-------|------|-----|------|----------------|-------------------|----------------|-----|------|---------|-----|
| Thiboult, Louis,      | 7                 | Waterbury, Conn.,  |      |       |      |     |      |                |                   | 33 English St. |     |      |         |     |
| Tarbell, H. A.,       | B                 | Bridgeport, Conn., |      |       |      |     |      |                | Bridgeport.       |                |     |      |         |     |
| Tracy, R. G.,         | N                 | lev                | 7 H  | av    | en,  | Co  | nn   | .,             | 216 Cedar St.     |                |     |      |         |     |
| Vartanian, H. M.,     |                   | Tabreez, Persia,   |      |       |      |     |      | 541 Chapel St. |                   |                |     |      |         |     |
| Vincent, W. G., B.A., |                   |                    | age  |       |      |     | -    | ٠.,            | 532 Pierson Hall. |                |     |      |         |     |
| Welch, Jr., J. H.,    | F                 | ore                | estv | rille | e, ( | Con | n.,  | •              |                   | •              |     | 36   | Elm S   | it. |
| Wildman, J. R.,       | D                 | Danbury, Conn.,    |      |       |      |     |      | 337 George St. |                   |                |     |      |         |     |
| Williams J. B.,       | В                 | Brid               | lge  | por   | t, ( | Cor | 'n., | ,              | Bridgeport.       |                |     |      | t.      |     |
| Williams, J. G.,      | B                 | Brai               | afo  | rd,   | Co   | nn  | ٠,   |                | 163 York St.      |                |     |      |         |     |
| Wright, W. H.,        | B                 | rid                | ge   | por   | t, ( | Э., |      |                |                   | I              | 016 | 6 Cl | napel S | t.  |
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# SERUM-THERAPY AS APPLIED TO DIPHTHERIA.\*

FRANK W. WRIGHT, M.D.,
HEALTH OFFICER, NEW HAVEN, CONNECTICUT.

It is now generally recognized that certain diseases are due to specific microorganisms or germs. It is also very generally conceded that by destroying these germs or the poison produced by them, it is possible to prevent or even to cure these diseases. The experiments within the past few years attempting to find immunizing agents against these maladies, have demonstrated that it is highly probable that the future treatment both prophylactic and curative of most of the diseases, if not all, that are due to specific organisms will be by a serum possessing either bactericidal or antitoxic properties sufficient to overcome the virulence of the attack for which it is given.

The first to show the immunizing power of attenuated cultures of specific organisms was the great investigator Pasteur, who in 1880 demonstrated that the attenuated culture of the microbe of chicken cholera, if injected into animals, produced mild attacks of septicæmia which rendered them immune from a second attack. Since that time some of the ablest scientists and laboratory workers of the world have contributed much labor and thought in their endeavors to produce by attenuated but gradually increasing injections of toxines, animal serums which will either kill the bacteria or neutralize their poisons, or both. diseases that have received the most attention are tuberculosis. cholera, typhoid fever, pneumonia, rabies, syphilis, small pox, the venom of snakes, tetanus, diphtheria, and those probably due, or at least complicated by streptococci, such as puerperal fever, erysipelas and scarlet fever. Only two anti-toxines.

<sup>\*</sup>Read October 15, at the meeting of New Haven Co. Medical Association.

those of tetanus and diphtheria, have been so far perfected as to warrant their general use as curative or prophylactic remedies.

Dr. Charles T. McClintock of Michigan in an article read before his State Medical Society and published in the Journal of the American Medical Association, July 4, 1896, offers the theory that the reason for the unsatisfactory results in all but two diseases is, that the bacteria causing these complaints, though much fewer in number, throw off a vastly more virulent poison, so much so that every tissue of the body feels the harmful effect, death being caused by toxemia; while in the other diseases enumerated especially tuberculosis, the microörganisms themselves kill by invading and destroying the tissues. He states that at the lowest estimate the toxine of tetanus is ten thousand times as strong as that obtained from the tubercle germ. By this theory it will be seen that for the cure of diphtheria and tetanus, an antitoxin is needed, but for tuberculosis and other germ diseases a germicide is required.

The writer's experience in serum-therapy has been confined exclusively to the use of the anti-diphtheritic serum. He has had the opportunity to observe the action of this form of treatment in over seventy instances. His observation leads him to believe that the use of antitoxin serum for diphtheria as a curative agent possesses much merit and is probably more of a specific for this dreadful disease than any other remedy that has ever been presented to the medical profession. Yet he is convinced that much is yet to be learned in regard to its use and action. there are undoubtedly many cases of this disease that would recover with practically no treatment is certain; but the experience of all of us has taught us that diphtheria is a most treacherous disease. If this is the case, are we justified in leaving untried in even the mildest case any remedy that has given such universal satisfaction as has the anti-diphtheritic serum? It is also certain that this form of treatment should be administered as judiciously and with as great care as any of our most dangerous drugs. The assumption that it can be given to any and all, with disregard for age, severity and duration of infection, etc., with impunity, is in my opinion, erroneous. In giving any medicinal treatment one would take into consideration the demands of all the symptoms; why, then, in the use of this most powerful remedy is it not logical that the same or more discretion should be exercised? The best results are as a rule attained if it is administered in the early course of the disease. but often it is of great benefit if it is given as late as the fourth or fifth day or even later. It must be borne in mind that different persons possess greater or less power to resist the virulence of the poison of diphtheria. There is in the blood of certain persons a natural antitoxin and the amount naturally varies in different persons. To my mind this explains why some contract the malady with but slight exposure while others with constant exposure do not take it. The Klebs-Löffler bacilli have even been found in great numbers in the throats of persons who exhibited no symptoms of the disease while those coming in contact with them have contracted it.

To demonstrate both the power to resist the toxic effect of the poison and efficacy of antitoxin serum even in old cases, allow me to cite the case of Clara —, age three years, seen with Dr. N. R. Hotchkiss of New Haven. At the time I first saw her she had had for three weeks a large persistent exudation upon the left tonsil. The clinical proof that this was diphtheria was that there was great infiltration of the cervical glands, paralysis of the muscles of articulation, feeble pulse and low fever. Two injections of antitoxin were given about forty-eight hours apart. Within two days the membrane began to gradually melt away and the general condition improve with the result that the child ultimately recovered, but convalescence was slow. Even in laryngeal cases, where the stenosis is so great that life is despaired of, it sometimes happens that the benefit is manifest before the obstruction is complete or the patient too much exhausted to recover. In such cases intubation may give a new lease of life until the remedy accomplishes the desired result. As stated previously, in the opinion of the writer, it is as a rule safer to give a moderate amount of the antitoxin even in mild cases of dipththeria than to wait until the indications for its use are imperative. The benefit of the remedy is slow and if there is much delay, frequently the want of prompt action is dangerous to the patient. I am accustomed to consider 1.000 antitoxin units an average dose for children from three to five years of age, this amount to be increased or diminished according to the age and urgency of the symptoms.

Unfortunately it is very difficult to determine the amount of poison that has been absorbed and we may find frequently after administering the remedy and before its beneficial action can be demonstrated, that the amount has been too small. This would be indicated by the membrane extending, the nasal discharge increasing, infiltration of the cervical tissues, or indications of heart failure. In such a case it is proper to repeat the injection.

This can be done at any time after the reaction from the first administration is passed which is usually from six to twelve hours. It is seldom necessary to give more than 1,500 units at the first injection. The most that I have ever used at first was 2,000 antitoxin units, yet some do not hesitate to give more. My experience leads me to believe that 2,000 units in divided injections from twelve to twenty-four hours apart, if it is used within forty-eight hours of the inception of the disease, is all that is necessary. It is not infrequent that the complaint is of much longer duration before the advice of the physician is sought. If such be the case it is absolutely necessary that the amount be larger than when given early and that the prognosis is less favorable with every hour of delay.

When the antitoxin begins to get control of the disease the rapidity with which the patient is raised from a most alarming condition to one of comparative safety is very gratifying; the membrane melts rapidly; the nasal discharge decreases; infiltration of tissues is lessened; the heart's action is strengthened and the whole condition is improved. In those cases that do not recover, if the patient lives for twenty-four or more hours after the administration of the remedy, its influence can be seen upon most of the unfavorable symptoms. These cases at first generally show an improvement of all the symptoms except the action of the heart, and death is usually caused by the extreme virulence of the disease. In unfavorable cases life is usually prolonged.

The sequelæ and complications, whether due to the disease or remedy, according to the frequency of occurrence, are urticaria or erythema, partial paralysis, broncho-pneumonia and I believe the urticaria is produced by the introduction into the blood of the horse serum, as I have observed less of it since I have been using an antitoxin serum containing a much greater number of antitoxin units per c. c., whereas, when I used a preparation that required a much larger quantity of serum, the lesion was almost constant. Paralysis of the muscles of articulation I have seen much oftener than before I used the Whether or not this is due to the antitoxin or to the fact that I have seen and closely observed more cases of diphtheria than formerly, I know not. I have seen nothing to lead me to believe that broncho-pneumonia or nephritis is more common after this treatment than under other treatments, both being not an infrequent occurrence either as a complication or sequelæ without antitoxin.

I have frequently noticed that after severe cases when a large quantity of the antitoxin has been used, that although the change from a very alarming condition to one of comparative safety is very rapid, the convalescence is very slow, it sometimes taking weeks to regain the customary strength and vigor. That convalescence is delayed by antitoxin is hardly probable. I believe these cases are such as with other treatment died, while milder ones got well and were restored to their usual strength in a shorter time. Now in certain of these patients who would have died under the old form of treatment the antitoxin neutralizes the poison in the system but does not repair the injury to the constitution, which in most severe cases is very great; hence, it is necessary for a long and tedious course of tonics to regain the strength lost.

The writers upon antitoxin serum and its use have had but little to say about the different makes and strengths of this remedy. Many physicians are accustomed to consider a certain quantity of antitoxin as a dose, not taking into consideration the many strengths made by many producers. Those made by Behring and Roux have probably been as extensively used as any and for a long time their preparations were the best that could be procured. Now there can be obtained an article of American production as good, or even better than the imported, and much fresher. I have used mostly that manufactured by Gibier of the Pasteur Institute of New York and the New York Board of Health. According to the bulletin of the Massachusetts State Board of Health of last March, examinations of the antitoxins made by several producers were tested and the results published: that made by Mulford & Company, Parke, Davis & Company, and Behring, containing the number of antitoxin units stated upon the bottle. That made by Roux did not contain quite the number of units stated. The label upon the bottle claimed that the vial contained 600 units while the test showed only 500. That made by Gibier did not contain by a considerable, the number of units stated upon the bottle. Others that have tested this make find that it does sometimes come up to its claims. I must say that I have used a large quantity of Gibier's antitoxin and have had excellent results from its use. I only discontinued its use on account of the large quantity required which I believed to be responsible for the reactionary symptoms and the subsequent skin lesions.

# OUR NEW ENGLAND STOMACHS; THEIR TRIALS AND TRIBULATIONS, AND THEIR RELATION TO SOME DISEASES.\*

By George C. Jarvis, M.D., Hartford, Conn.

Indigestion, dyspepsia, double fermentation and a variety of other names for stomach troubles are among the more common maladies met with by the general or family practitioner. troubles are very much more frequent in this country than in most of the civilized countries of Europe, particularly England, Scotland, France and Germany. As such is the case there must be some appreciable reason for such a marked comparative difference. Trash or truck eating and what we may call between meal nibbling is in a measure accountable for this. Most foreigners are usually satisfied with three meals a day, but in this country, particularly in New England, the opposite is very commonly the case. Habits of diet and other habits of life are probably the principal cause, as Yankee babies are presumably allowed to begin life much on the same plan as the new-born in other countries. There must be some causes or combination of causes. What are they?

Rapid transportation and modern facilities for bringing to our market products from tropical fruit-producing countries have enabled the tradesmen to provide us with valuable fruit from all climates at all seasons of the year, as for instance, bananas, What more delicious and life-sustaining fruit can be taken as an example than the banana or plantain? Properly cultivated and ripened it is with most individuals very acceptable, nourishing, digestible and safe; but think for a moment of some of the processes that this fruit is likely to be subjected to under unfavorable circumstances at unfavorable seasons and see why it is unsafe and often exceedingly indigestible and productive of early painful results. Suppose, for instance, that it is grown to sufficient size and in proper condition under favorable circumstances to be safe, but the stalk is cut at the time the fruit is nearly matured and almost ready for ripening and carried to the seaport whence it is to be shipped. During the cold months from November to May the fruit is almost certain to have been

<sup>\*</sup> Read before the Hartford County Medical Association, October 21, 1896.

chilled at a most unfortunate time in taking it from the plantation to the steamer. It is then placed in the hold of a fruit steamer, the temperature of which, must of necessity be in excess of that of the climate in which it grew. There it must remain in this superheated stowage room say from a week to two weeks. Then in unloading in some northern port it must again be more thoroughly chilled. Here in the warehouses it either remains to come to what may be called the ripened stage or is sold into the next hands, when again it has to repeat the process which it has before undergone, and is this time even more thoroughly chilled and rendered still more unsafe as a food. We will now say it has practically reached the retailers' hands and has undergone treatments almost sure to prevent its ripening as any fruit should to be fit for a place in the human stomach.

Then, again, for a few moments turn your attention to another almost universally acceptable product of tropical countries in the early spring months. We will instance that delicious little red morsel, the strawberry. How can it be brought to our table and retain its form unless it is picked and placed in crates in an unripened condition. What takes place under these circumstances in the juice of this succulent and tempting little berry? When ripened within a short distance of where it will be consumed, picked one day and eaten the next, or what is better, picked in the morning and eaten the same day, it will do no harm; but the one that I have referred to as having been grown and transported out of season from some tropical country. the juice in that berry is oxalic acid during digestion, and oxalate of lime shows abundantly in the urine. Who, knowing this, would be likely to eat or drink even in small quantities, a crystal which is so universally known to be a deadly poison.

Again let me invite your attention to one of the most commonly prevailing bad habits in this country over any other country, that is the imbibing of ice cold drinks and generally in large quantities. What takes place in the stomach when, for instance, six or eight ounces of a fluid at a temperature of 32° is placed in that cavity of the body whose normal temperature should be 98.5°? In the first place the temperature of the stomach must be lowered nearly to that of the jced drink. Under such circumstances digestion is immediately stopped. When the cold material has lowered the temperature of the lining of the stomach and the heat of the stomach has raised that of the cold contents until they have reached the same

temperature then it begins slowly to rise to the degree where true peptic digestion begins. At a certain point in this process of slowly elevating of the temperature toward normal, alcoholic and acetic fermentation begins to take place, and when this acetic acid fermentation begins it counteracts the process of true peptic digestion. What would be the result reasonable to expect if this is repeated two or three or, perhaps, half a dozen times a day for six weeks or two months? any one familiar with the action that takes place would say at once, a strong liability to catarrhal condition of the digestive coat of the stomach. (This refers to the time of the year when ice-water and cold imbibing is one of our most common every-day indulgences in this country).

Milk is particularly harmful in its effect when taken very cold, because in the first place it takes longer when the milk coagulates under the influence of the gastric juice for the stomach to be restored to its normal temperature, and the coagulated milk under the influence of the double acid thus produced would be more difficult of digestion, and is apt to form into large cheesy masses and go out of the stomach into the intestines not sufficiently broken up and create an unhealthy action in its mucous membrane, thus impairing digestion in the intestines. These fermentations are sometimes the cause of appendicitis. I have seen several cases which could be traced to such causes. The effect of anything extremely cold taken into the stomach in any considerable quantity would practically bring about similar results.

There are a great many ladies,—particularly those who are occupied indoors, which prevents their having the benefits of fresh air with exercise that acts as a recreation and a red-blood maker, and are much inclined to strong tea drinking and the use of starchy foods, such as bread and butter, oat meal, hominy, cake and other sweets,—who as a result of these causes have a complexion in their stomachs very similar to their pale, bloodless and tawny-looking skin. In China and Japan among the poorer classes particularly, where tea-drinking and rice eating are universally known to be carried to great excess, the gastroduodenal catarrh and ulcers are very commonly met. These are conditions and causes that are typical, and for that reason they have been selected for examples.

After having treated with fruits, cold drinks, sweets and starchy foods, perhaps it would not be amiss to call attention to one of the articles of food used more freely during the cold season of the year, namely the oyster. A good oyster is an excellent food but a bad one is exceedingly injurious. For instance, an oyster that is opened at the shore and washed in fresh water, which is often done to increase its size, will, on account of its absorption of the fresh water be changed more rapidly to an alkaline fermentation. Albuminoid foods, subjected to this ptomaine change, which is an alkaline fermentation, are now known to be active poisons.

It is not my intention to go into detail in each case, but to select a few conditions where the cause is easily understood and relief to the patient is more readily obtained. As an illustration, there are a large number of cases of so-called malaria that are wholly dependent upon indiscretions in diet; there are also a large proportion of the cases of so-called nervous prostration which are due to imperfect digestion caused by some of the errors already referred to; and every physician knows that irregular heart action is frequently caused by gastric fermentation and malnutrition. Insomnia often arises from the same cause.

Since 1884 ten gentlemen who had served as officers during the rebellion from 1861 to 1865, and had been previously treated for chronic malaria, came under my care. Each and every one had at longer or shorter periods chills which had been attributed to a malarial cause that it was believed they had acquired during their service in the army. Realizing the causes, this chronic malaria proved to be due to gastro-intestinal fermentation, and was treated for such with very beneficial results and complete recovery in every case. Believing that many of these cases are caused by fermentation it is important to avoid in dieting foods that will be more easily made to cause this condition, or sooner or later gastric fermentation will almost surely result in intestinal indigestion. If a patient is suffering from a tendency to gastric fermentation it would be unwise for him to partake of food that would provide material for this action, such foods as those that contain starch or sugar. It is better to nourish the patient with albuminoid foods and if starchy foods must be allowed, then starch fermentations must be prevented by food being prepared so that the acetic fermentation cannot take place. In other words, take as an illustration bread, which is such a common food, and as we call it, the "staff of life," if cut say, about one quarter of an inch thick and toasted so as to destroy this principle; or one of the more common foods that is almost in daily use and contains a large proportion of starch, we will instance the potato. If the potato is simply boiled or baked the starch fermentation process will assist that action in the stomach, consequently a potato boiled and then cut in such a way that it can be cooked over again the same as bread, toasted, that is cooked the second time with a dry heat, the fermentation that would take place with the potato in the stomach will be prevented. In some severe conditions the starchy foods should for a time be entirely abstained from.

I am fully satisfied in my own mind that small peptic ulcers near the gastro duodenal orifice are very much more common than are generally supposed, and besides this a recurrent catarrhal condition is also very much more common than is usually considered to be the case, and these peptic ulcers are what might be called small cankers such as are sometimes found in the mouth, and are frequent causes of gastralgia and stomach colics.

In the medical treatment some anti-ferment and antiseptic should be selected, and the best time for this to be taken is when the stomach is more likely to be nearly empty, and consequently there is the least amount of material to require neutralizing by the anti-ferment. This period varies somewhat in different patients, but the average time which seems to have proved the best is about half an hour to an hour before the next meal. In giving these anti-acetic fermentation medicines when the stomach has the food of a meal in it the digestion is liable to be delayed instead of aided. The administration of tonics when the stomach is in this condition of impaired digestion will frequently delay digestion and make the digestion of tonics themselves still more difficult. The different salts of iron which are so commonly in use as tonics are particularly, under these conditions, liable to produce the effects that have just been referred to, but when the digestion has nearly reached its normal action then a well-selected tonic may be expected to produce beneficial results. Little has been said about the use of the stomachpump and warm stomach irrigation, for if the suggestions which have been made are carried out, this is not likely to be needed; but in extreme cases it will sometimes prove beneficial to begin treatment this way.

# THE THEORY AND PRACTICE OF SURGICAL DRESSING.\*

By LEONARD WOOLSEY BACON, JR., M.D.

#### LECTURE II.

#### IV. SEPTIC WOUNDS AND PHLEGMONOUS PROCESSES.

In this class of wounds the repression and restraint of secretions and the formation of a seal is no longer the object sought, but is, on the contrary, to be avoided in every way, and preparations must be made to favor the rapid exit of virulent and acrid secretions, sometimes very profuse. Important as infrequent dressing is for other classes of wounds still more important is frequent dressing for septically inflamed wounds and the sometimes prodigiously active phlegmonous or gangrenous processes which you will be more likely to see in the pavilions than in the regular surgical wards.

In discussing the treatment of septic wounds we will follow the same course of description as before and proceed from the innermost layers of the dressing to the external bandage, trying to make as clear as possible the reasons for each step. Let us, as before, take a familiar and a simple example. The surgeon, let us suppose, has just completed the evacuation of say an axillary abscess. We will suppose that the walls of the abscess have been scraped with a sharp spoon and the cavity flushed out, all through an ample cutaneous incision in the arm-pit. The complete arrest of the hæmorrhage has not been possible nor the complete removal of all septic matter with the sharp spoon. How are we to proceed to dress the wound?

Let us first consider what we have to expect if the wound is not dressed at all. Tension and the consequent pain will have been relieved once for all by the free incision. The divided blood-vessels will pour out blood and the gorged lymphatics their lymph into the cavity until a clot fills this moderately full,

<sup>\*</sup>Three lectures delivered before the pupils of the Training School of the Connecticut General Hospital at New Haven, Conn.

Septic germs from the lymphatic interstices and from the thrombosed veins which were beyond the reach of the spoon will infect this clot and will liquefy it, and instead of the creamy, yellow, so-called "laudable" pus composed of emigrated leucocytes floating in a more or less bland serum, which you might properly expect to find after two or three days from such a wound if properly dressed, you will get a watery, thin, blood-stained matter, made up, not of leucocytes and blood-serum, but of the decomposed and liquefied blood clot, irritating and acrid to the surrounding tissues and swarming with bacteria whose virulence has been much enhanced by the favorable opportunities for their development.

Pus of this description is the product of liquefaction of a previous blood clot or even of a disintegration and liquefaction of the solid tissues, and is the result and at the same time the evidence of a virulent infection. Such pus is extremely acrid and destroys and dissolves the tissues with which it comes in contact. It must be gotten out of the wound as promptly as possible. Elaborate drainage and frequent dressing are indicated whenever and wherever it is found. It is a totally different substance from the bland, creamy, "laudable" pus occasioned by the action of less virulent microbes on healthy granulations. This, as has been said, if not too profuse may remain for three or four days in contact with a well-dressed, healing wound without doing as much damage as would be done by an untimely dressing. thin, so-called "ichorous" pus will speedily corrupt the tissues round a wound, and its retention for twenty-four hours or more. especially if under the least pressure, may induce a grave condition of sepsis. Indeed, such pus does not often make its appearance until marked symptoms of sepsis are manifest in the general condition of the patient as well as in the wound.

The relief of the tension by the incision and the scraping of the abscess walls have allowed the engorged lymphatics and veins to empty themselves, and having emptied themselves, to resume their respective functions, the lymphatics that of absorbing lymph or other liquid matter presented to them, and the veins that of carrying blood from the affected region to the right side of the heart. The acrid, ichorous pus, with necrotic tissue swarming with bacteria, bathes the mouths of the lymphatics and the opened lumen of the veins, and the way to pyæmia or at least severe sepsis is open.

A case on which I operated last Christmas with the assistance of one of the members of this school, in spite of all my efforts came into this very condition and died fourteen days after operation of acute septicæmia. The operation was an amputation of the breast by Willy Meyer's method. Owing to some complications the operation was very long, and from the effect of both the large amount of ether given and the shock, the patient was in collapse when the amputation was completed. The patient was a large, portly woman with very heavy breasts and quite fat, the wound surfaces were larger I think than any I have ever seen. Owing to the collapse of the patient it was impossible to tie off all the sixty or seventy bleeding points which had been With the recovery from shock there was considerable oozing from many parts of the wall of this immense wound, and the three or four drainage-tubes combined with the numerous strands of iodoformized lamp-wicking which were inserted for drainage, did not suffice to prevent the blood from accumulating under the very extensive flaps. The first dressing was done at the end of forty-eight hours, under very great difficulties though I had the assistance of another surgeon and of a trained nurse. Three complications made this dressing peculiarly difficult, first the dressing itself was very large and elaborate; secondly, the patient was very feeble and very heavy though well out of collapse; thirdly, the patient suffered from traumatic delirium tremens following immediately upon recovery from the anæsthetic. The discharges from the wound at this dressing were, of course, very profuse but were not unsatisfactory in character, being purely sero-sanguinolent. Probably some slight occurred during this dressing, for at the next, forty-eight hours later, some pus was found with the discharge. From this time on, septic symptoms began to develop. The healthy granulations, which had united a considerable part of the wound, melted away, and in spite of dressings renewed as frequently as I dared, and of frequent and thorough irrigation, the skin-flaps became at the end but big bags full of pus, partly held together by the sutures, partly gaping where these had given way. delirium tremens passed into the coma of profound sepsis and in this condition the patient died on the fourteenth day after the operation. Had it been possible, without having the patient die on the table, to have ligated all the clamped vessels this result would, in all probability have been averted. The skin-flaps would have become throughout a considerable extent agglutinated to the chest-wall, and the slight infection occurring at the first dressing would not have been able to spread throughout the whole wound. The amount of the discharge would have been much less and the chances of infection very much reduced. Though this case was far different from that of the simple abscess cavity we have been considering, it illustrates by the still stronger example of a primarily aseptic wound the necessity of preventing the formation of a blood-clot in a suspicious and above all in a septic focus.

The process we have considered as occurring in a neglected abscess-cavity can be greatly changed by intelligent dressing. A first step, that may be deemed advisable or not and that more properly is part of the surgical operation than of the dressing, is the swabbing out of the cavity with a small amount of a powerful disinfectant. For this purpose various substances are used, according to the fancy of the operator or the exigencies of the case. Among these are liquefied carbolic acid (95 per cent), tincture of iodine or Churchill's tincture, a strong solution of silver nitrate, and a saturated solution of zinc chloride. Most of these substances besides acting as antiseptics are more or less styptic, rendering the abscess-cavity comparatively dry.

#### A. THE FIRST DRESSING OF AN ABSCESS.

We have three objects in view in the dressing we are to apply to the axillary abscess prepared for us in the manner we have supposed. First, the arrest of hæmorrhage and unnecessary discharge as far as possible. Second, the sterilization as far as possible of the unavoidable discharge. Third, the removal of the discharge as fast as possible out of the cavity and into the outside dressings.

1. The Arrest of Hamorrhage. In trying to meet this indication we depend on the application of pressure by some form of In the case we are considering the importance of the packing. hæmorrhage would not ordinarily lie in the loss of a few ounces of blood by the patient, but in the accumulation of an easily decomposable blood-mass in the abscess cavity. It is, moreover, in the deeper recesses and pockets of the cavity that a decomposing blood-clot would be most harmful. These considerations should lead you to use great care to see that the packing is introduced systematically into each and every corner of the cavity before a larger mass of it is stuffed in to fill up the main body of the cavity; otherwise you will not avoid the evils which the packing is intended to prevent, but you will have the same objectionable blood-clot in contact with the more dangerous and less accessible parts of the cavity and only a core composed of

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2. The Stranger of the Parkets. The second management THE II SETTING THE INSTITUTE OF THE PROPERTY O possible. This we seek to accommiss it the time of the present which may be thrown in loosely and their inwould serve with a previous lives, or even aboveled to Some cases, with a spartial or a nearcoom. The world not a first of using the this purpose absorbite to this, but some it the series sames, of which indiction is the type, which are known to exersome marked effect in arresting the growth of greater. The that any anheance placed deep in the timbers as here can be readily absorbed in proportion to its solubility mans not be overlooked, and antiserus powders must not be madd not larishly for fear of poisoning. It may be deemed unnecessary or inadvisable to deposit a mass of powder in the wound before packing, im which case the packing material is immediately introduced, as above described, and we depend for the sperilination of the discharges upon the antiseptic powder with which the packing material should in almost all instances be impregnated. But two substances newadays are much used by surgreens for this purpose, vin, game strips and cotton lamp-wicking, best impleganated, according to my opinion, with indeform. The action expect from the induferm, acetanilide, "thicform," indiphur, or other nearly insoluble antiseptic with which the metallic manner be filled is the phur, or other nearly institute among the filled is the grane or wicking may be filled is the grane and interstices of the grane or wicking may be filled is the grane. and interstices of the gaune or williams may be continuous evolution under the action of the discharges upon the continuous evolution under the action of the discharges upon the continuous evolution and its continuous evolutions. continuous evolution under the action of powder of some active principle (with fodoform and its composite of some active principle suithurous and even suith powder of some active principle . With active series and even some ers, free indine; with sulphur, sulphurous and even some ers, free indine; with sulphur acids and phenomerate eras, even sulphur acids and even sulphur acids acids and even sulphur acids ers, free iodine; with sulphur, surplands
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3. The home of the Therman was we came now sideration of the third indication mentioned name to the removal of the discharges. The means employed such an axillary abscess as we have imagined are tion of tubes and the proper disposal of the packing.

to be used in such a case are either of soft rubber or of glass. They should, if possible, be so placed that gravity may assist in emptying them and long enough to reach from the deepest part of the wound to the skin-surface, close to which they should be cut off. If the sides are to be perforated, it is fully as important that there should not be perforations at or near the external orifice of the cavity through which fluids collected from the deeper recesses of the cavity can be poured out again into another part of the wound cavity instead of being discharged fairly beyond the margins of the skin-incision—fully as important, I say, that there should not be lateral perforations here as that there should be frequent perforations in the deeper portion of the tube. In the disposal of the packing the removal of discharge is facilitated by stuffing the whole cavity as uniformly as possible and not leaving part of the packing firm and part loose. The packing too should fully dilate the lips of the wound and protrude distinctly beyond the orifice of the cavity.

- 4. The External Dressing. This much having been done the internal dressing of the wound is complete and we may now proceed to the external dressing. In the case of the axillary abscess we are considering this would properly enough be of much the same character as the dressings we have recommended for an aseptic wound, with the omission however of any protective strips, which are positively counterindicated in the dressing of any wound not presumably aseptic. Iodoform or acetanilide powder should be freely dusted over the protruding packing and on the skin about the orifice of the cavity after carefully cleansing the whole region from blood and pus, its object being principally disinfection. A few layers of iodoform or acetanilide gauze should be laid over the wound and a generous supply of bichloride or plain gauze above this. A layer of cotton or wool and a bandage will complete the dressing.
- 5. Re-dressing. After one to three days this dressing should be taken down and a second, somewhat different dressing applied. It is better, other things being equal, to wait three days than only one day, in order to allow a large part of the necrotic shreds which have escaped the spoon to separate and be removed with the packing when that is withdrawn. If the cavity has been treated with a strong disinfectant at the time of the first dressing, such as pure carbolic acid, iodine, or silver solution, it is foolish without special indication to re-dress in less than three days, because these agents kill all the tissues with which they come in immediate contact and the superficial

sloughs from the disinfectants and the other shreds of necrotic tissue require at least this amount of time to separate and it is very undesirable, if it can safely be avoided, to repack a cavity while such a slough still covers its walls.

### B. THE SUBSEQUENT DRESSINGS OF AN ABSCESS.

One important difference should distinguish the subsequent dressings of an abscess cavity from the first. The first indication mentioned, namely, that of providing for the arrest of hæmorrhage and unnecessary discharge, after a proper first dressing ordinarily falls away and a fresh indication may or may not take its place according to the condition of the wound, namely, that of stimulating the tissues to the production of granulations and to the more complete throwing off of necrotic shreds.

1. The Disposal of the Packing. In view of the fact that it is no longer necessary to make special provision against hæmorrhage, the disposal of the packing should be somewhat different in the subsequent dressings from what was recommended for the first. The gauze or wicking should be carried with equal care into every corner and recess of the wound, but not stuffed in tight as before, the packing being now intended for a somewhat different purpose. Its function now is threefold, first, to keep the walls of the cavity from falling together until they are thoroughly cleansed from necrotic shreds and septic matter, lest if two granulating surfaces be brought together they become adherent and form a dividing wall shutting off from free communication with the general cavity some pocket which may include some pus or necrotic tissue, thus giving rise to a fresh abscess requiring perhaps further incision; secondly, to act by its absorbent qualities as a capillary drain or wick to facilitate the discharge of the wound secretions; thirdly, to act as the carrier for the antiseptic or stimulating substance which we may desire to have act upon the walls of the wound.

When these three objects are kept in view it is obvious that a much looser packing of the wound will better meet the indications than the tight packing of the first dressing. Particular pains, however, should be taken in packing the orifice of the cavity. It should be the object of the dresser to convert every wound into a funnel-shaped rather than a bottle-shaped wound. The natural tendency is for the orifice to close much faster than is commensurate with the healing process inside. The first inclination might be, in trying to combat this, to stuff the orifice

more tightly than other parts of the wound in order to keep it dilated. A moment's thought will show however that in this way you will only cork up the secretions within the wound and so precipitate, by causing retention of the secretions, the very condition you seek to avoid. An exception, however, may be made in case of the presence of one or more drainage-tubes, around which the packing at the orifice may ordinarily be stuffed tight with advantage. Otherwise the best that can be done is to tuck the packing as snugly as possible into the corners of the lips of the incision and pack the orifice as a whole but loosely. From this tendency of the skin to contract and close the orifice of the wound too quickly is deduced the general rule of surgery, to open an abscess by a large cutaneous incision.

As soon as the interior of the cavity comes to a condition of healthy granulation the packing should be rapidly diminished in volume so as to allow the abscess walls to collapse and become agglutinated and so obliterate the cavity entirely. To continue to stuff a healthy granulating cavity tightly is bad dressing and though it may not succeed in preventing the healing and closing of the cavity will surely retard it.

Having thus discussed the first two functions of the packing in a second or later dressing of an abscess, we will now consider its third function, that of carrier for an antiseptic or for a stimulant to the tissues.

The use of Local Stimulants. When the sloughs and necrotic shreds fail to separate promptly from the walls of the cavity and the granulations do not have the florid, healthy, red appearance we wish for, and the character of the discharge is not that of the creamy, comparatively bland substance known as "laudable" pus, we impregnate our packing not only with an antiseptic such as iodoform but also with some further substance more distinctly irritating and stimulating to tissue-growth. such substances two are more widely used than any others, they are some balsam, generally the balsam of Peru, and the sulphurous oil distilled from fossil fish and known as ichthyol. effect of these is like that of liquid manure upon a garden, they stimulate the growth of granulations sometimes enormously. By the increased supply of blood attracted to the part, the granulations, as they are largely composed of blood-vessels, are able to thrive in spite of the bacteria, which are overcome as they become exposed more and more to the germicidal influence of the liquid and cellular constituents of healthy blood. rather in this way, I think, than by any direct antiseptic action of their own that the balsams and ichthyol help to bring a suppurating focus to the point of healing.

Not only the pushing out of granulations but all the activities of a suppurating focus are stimulated by the balsams and by ichthyol, so that very often after either of these stimulants, or indeed any stimulant has been applied to a sluggishly granulating and suppurating focus, you will find at the first dressing thereafter, a larger amount of discharge than before the application. If, however, the appearance of the discharge is more that of the creamy, "laudable" pus before alluded to, and the granulations at the same time look redder, healthier and stronger, you may expect to find the flow again diminished at the next dressing and an appreciable improvement in the general condition of the wound. In using these substances the Peruvian balsam should ordinarily be tried first; it is a somewhat less powerful stimulant than ichthyol; the latter when used pure sometimes causes a considerable amount of smarting and burning in a wound.

#### C. THE DRESSING OF SEPTIC WOUNDS IN GENERAL.

Having considered the dressing of an axillary abscess as a type we will now consider the treatment of other and graver forms of septic wounds, namely those which are comprised under the headings of phlegmons, phlegmonous erysipelas, cellulitis and gangrenous, phagedenic and pyæmic processes. In these cases every effort to promote the healing of the wound must stand aside before the one all-important indication for ridding the affected part completely and within the shortest possible time of the acrid and septic substances, both the bacteria and the products of their activity, which threaten death to the part affected and even to the whole body. The surgeon is here called on to incise the tissues freely and deeply right and left, and the dresser can have no respect for forming granulations or healing processes in one part of the wound until this all-important object has been attained.

The means used to this end are, first (and foremost and above all), drainage, elaborate, complete, and especially rapid as possible; secondly, stimulation of the local tissues; thirdly, relaxation of the blood-vessels of the part through moist heat; and fourthly, disinfection by chemical solutions.

1. Drainage. In these cases, even more care than in the dressing of an ordinary abscess cavity should be taken with the packing and the placing of the drainage tubes. As we frequently are not able to scrape the walls of the extremely irregular cavi-

ties which these graver septic processes form (because to scrape part of the cavity with the sharp spoon and leave the rest unscraped would probably only invite further extension of the process) there is often but little or no hæmorrhage to provide against from the walls of the cavity, and therefore loose but careful packing would be more in order than firm and tight stuffing.

Such septic processes as we are now considering always should have and generally will have more than one incision through the skin communicating with the common focus of suppuration. This makes possible a new and very useful application of the packing material known as the seton. The ordinary dressingprobe is technically known as a "seton-probe" and is provided at one end with an eye for just this purpose. A seton then is essentially a cord, composed of gauze strips, of strands of wicking, or of other suitable material, passing subcutaneously from one wound orifice to another. It serves the very useful purpose of providing what is called "through and through" drainage and is a most valuable device for use in such cases as these. Each end of the seton should project an inch or two beyond the cutaneous incision. If the seton be difficult to pass or you fear on re-dressing that it will be difficult to replace it after it is withdrawn, an excellent method is the following: Instead of threading the seton-probe directly with the seton, thread it with a piece of heavy silk or other cord ten or twelve inches long and tie the two ends of the cord tightly together to form a stout loop more slender than the seton. Pass the probe and cord from one incision to the other and doubling the material of your seton through the loop of cord, draw the loop clear through and the seton after it. Then cut the loop free but do not cut off the bight of the seton. Similarly, on re-dressing, before withdrawing the seton, pass a strong loop of cord through the bight of the seton and as you withdraw the seton draw the cord through in the track of it; now instead of cutting the loop of cord cut away the seton from it and leave the cord in the wound while it is being flushed out and cleaned, the cord will then be ready to serve in drawing a fresh seton through into the place of the old one without the risk of being unable to find the passage anew by probing.

Drainage, then, I repeat, is the all-important means to be used in these cases, and no pains should be spared to make it as thorough and efficient as possible.

2. Stimulation of the Local Tissues. With drainage should be coupled in most instances stimulation of the local tissues by

impregnation of the material of the packing and of the setons, with balsams or ichthyol or with some powder like sulphur which will answer the double purpose of stimulant and antiseptic. I will not here enlarge further upon what has been said on this subject in a paragraph of the preceding section.

3. Wet Dressings. The next thing we have to consider is the application of moist external heat. This should not be used without some judgment and discrimination. Moist heat used to be applied in such cases by means of a flaxseed or other poultice. This has been superseded in antiseptic surgical work by the use of wet dressings.

A wet dressing is applied in either of two ways, according as it is expected to retain its moisture by preventing evaporation or to be moistened from without at intervals before being removed. If the first, gauze should lie in a basin of antiseptic solution during the dressing and should be wrung out, not too dry, and laid next the wound. When economy does not have to be especially consulted, the gauze should be applied very copiously and over this a generous piece of oiled silk or oiled muslin, or heavy guttapercha tissue, or paraffin paper. If it is necessary to economize in the use of gauze a few layers of it can be laid next the wound and the bulk of the dressing be made up of absorbent cotton wrung out of the solution, but this, when wet, settles in uneven lumps and is far less comfortable than the gauze. This dressing should be retained in place by a gauze bandage, loosely applied, which, for ease of application should be first dipped into the antiseptic solution. Over this should come a layer of dry cotton or wool (the elastic body), and the dressing should be completed by an unbleached muslin bandage applied tightly enough to afford the desired amount of pressure.

All wet dressings to be of use must be bulky. A dressing supposed to remain wet through prevention of the evaporation must be at least bulky enough to weigh a pound or more when saturated with solution.

For smaller dressings, as for felons, crushed fingers, etc., another form of wet dressing is far preferable—similar to the one described above but with the omission of the water-proof tissue, and of the unbleached muslin bandage. The ordinary dry dressing as described for aseptic wounds (omitting protective strips and dusting powder) but somewhat more copious, is applied and tightly bandaged with a gauze bandage. Upon this the solution is poured to the point of thorough saturation. The superfluous dripping can be arrested by squeezing the dressing

slightly between the hands. After it is once thoroughly saturated, whenever the outer layers dry they may be moistened with additional solution, though it is not necessary for them to be soaked again to the point of saturation unless by accident the dressing has been allowed to become dry throughout. For the smaller wet dressings this is the only way of assuring the moist condition of the applications throughout the treatment. In ambulatory cases I ordinarily provide the patient with an antiseptic solution twice as strong as I intend to have applied, and direct to have it diluted at the time of application with an equal amount of hot water. In the case of larger dressings it may or may not be more convenient than the other form.

Wet dressings have this one great advantage which frequently warrants their employment in many cases, even in the face of other counter-indications, namely this, that they facilitate very considerably the rapid absorption of the discharges and that the discharges, when absorbed into them, are exposed to the action of a moist and therefore much more active antiseptic. A mere allusion to the behavior of a perfectly dry sponge and to that of one which has been wet and then wrung out as dry as possible—when thrown into a vessel of water—will suffice to explain why the wound-discharges are more quickly and more thoroughly absorbed by wet than by dry dressings.

But considered as the carriers of moist heat the question is not quite so simple. The benefits expected from moist heat in the treatment of septic wounds are two-fold: First, a relaxation of the tissues and vessels round about the affected focus rather than at the focus itself, whereby the blood-stasis which always obtains in the vessels for some distance round about a center of suppuration, may be relieved and may not pass into the more irremediable condition of widespread thrombosis. This effect is looked for more particularly in the venous system. On the side of the arteries we expect a second benefit; the arteries too are dilated under the influence of the warmth and moisture and we hope to see larger accessions of fresh arterial blood combat, more successfully than any antiseptics we can apply locally, the pernicious effect and the enormous proliferation of the microbes.

The dangers from wet dressings, aside from the danger of intoxication from the antiseptic and considered only as the carriers of moist heat, are likewise two-fold. First, they provoke a certain amount of maceration of the skin (dermatitis) whereby infection can readily occur in places denuded of epithelium by the dermatitis; or if the epithelium do not peel off, germs may

find a favorable habitat in and between the loosened but still adherent cells. Secondly, the relaxation and softening of the tissues, which are relied upon to relieve the stasis, may prove equally effective in furthering the spread of microbes along the planes of softened and comparatively non-vascular connective tissue, as in what are known as dissecting phlegmons, making their way along the planes of intermuscular or subcutaneous fascia.

In view of these two objections to the wet dressings my own practice is to use them freely in all deep-lying septic processes, understanding thereby all such processes whose principal focus lies beneath the deep fascia of the part. In phlegmons whose principal seat is in the tissues between the deep fascia and the skin, I am convinced that extensive wet-dressings must be used with considerable circumspection to avoid encouraging an extension rather than an arrest of the disease.

Before dismissing the subject of wet dressings I wish to speak of the frequent necessity of their use in lacerated wounds and crushing wounds of the extremities even in cases that perhaps are not septic. Their object in these cases is not so much to accomplish disinfection as to prevent the necrosis of shreds or perhaps of valuable flaps that may have the integrity of their vascular supply perhaps severely compromised. An abundant provision of heat and moisture will frequently save much useful tissue that would, if dressed dry, inevitably mortify and slough away.

We have considered so far the drainage of septic wounds, the use in them of local stimulants, and the application of moist heat in the form of wet dressings. There remains to be considered the use of disinfecting solutions.

4. Disinfecting by the use of Chemical Solutions. Disinfection by chemical solutions, though not to be despised, occupies a less important place in the treatment of septic wounds for two reasons; first, the dressings should be so frequently renewed as to give but little opportunity for the decomposition of discharges which have been brought to the surface or for the propagation of bacteria in them, and secondly, chemical sterilization of living or dead tissues still attached to the body is practically impossible excepting by the use of small quantities of substances of caustic strength by swabbing or otherwise. It may be wise to apply such substances momentarily at one or more dressings, but this does not form part of the dressing proper which is the subject of our more particular consideration here.

It is considered proper, and I can see no valid objection to use for flushing septic wounds the strongest surgical solutions—1-1000, or even 1-500 bichloride solution, or, in case the discharges are offensive, a 1-200 or 1-100 solution of potassium permanganate. If danger of poisoning is feared from the residue of solution in the wound it may be finally flushed with sterilized water or salt-solution. It should, however, be constantly borne in mind that the real benefit derived is from the flushing, and that the substance in solution in the fluid has far less importance than the copiousness of the irrigation and the skill with which every pocket and recess is washed out. Indeed, many consider the use of antiseptics in the solution to be rather of the nature of a sacrifice to "Mrs. Grundy," and recommend simply a great abundance of good, clean, warm water.

Disinfecting solutions are used further in two ways in the dressing of septic wounds of which the first we shall mention is the saturation of the wet dressings described above. With what should these dressings be wet? There is practically but one answer: with bichloride solution, never stronger than 1-2000 and varying from this to 1-10,000 or 1-20,000 at which strength bichloride solution has still a very appreciable antiseptic effect. The use of a solution strong enough to cause even a slight dermatitis is ordinarily very unwise. The weaker solutions, if the moisture of the dressings is maintained, will suffice to place the microbes hors de combat and stronger solutions will do no more.

Besides being used for flushing the wound and for saturating the dressings, disinfecting solutions are also used in the treatment of septic wounds, in very bad cases, for what is known as continuous irrigation and for the constant bath.

Continuous irrigation is commonly employed for grave septic disease of the extremities and when used is commonly combined with suspension of the limb necessitating some form of splint and some suspensory apparatus which we will not here describe. The dressing, however, should be a light one composed, bandage and all, exclusively of absorbent gauze. The strength of the bichloride-solution should not exceed 1-4000.

In the constant bath, used in septic processes about the trunk, phagedenic bed-sores, extensive burns and multiple pyæmic abscesses, there is commonly no dressing applied at all, the object of the bath being to do away with the necessity of dressings. The strength of the bichloride solution should not exceed 1-10,000. After exposure to this for one or two hours the solution should ordinarily be drawn off and the patient should lie for

some hours in pure water. The use of a few tablets of bichloride will readily convert this again into a solution of the proper strength. In the use of continuous irrigation or of the constant bath it is generally necessary to make some provision for maintaining a constant medium temperature of the solution.

This finishes what I have to say about the dressing of septic wounds. We will proceed in the next lecture to consider briefly the dressing of sinuses and will then take up with a little more care that department of surgical dressing which more than any other calls for the exercise of judgment and discrimination in the dresser and frequently puts his experience and his resources to the severest test—namely, the dressing of ulcers.

# WIDAL'S SERUM-DIAGNOSIS OF TYPHOID FEVER.

C. J. Bartlett, M.D.,
Instructor in Pathology and Bacteriology, Medical Department,
Yale University.

The most recent means proposed for the diagnosis of typhoid fever, rightly spoken of as Widal's method, seems to promise so much practical assistance in deciding doubtful cases that a brief outline of the investigations upon the results of which it is based, and a notice of the reported success attending its use are suggested.

This serum diagnosis is a practical application of Pfeiffer's "specific immunity-reaction" test of the typhoid bacillus. In their investigations upon the actions of the cholera spirillum. Pfeiffer and Issaeff showed that guinea-pigs which had been rendered immune to cholera infection had acquired a lasting immunity against that disease, "and that the serum of such immunized animals has a specific action in protecting against infection by genuine cholera vibrios only, while for other species it has no action different from that of the blood serum of normal animals" (Sternberg). Following this, in May, 1894, Pfeiffer reported that if a small amount of cholera serum be added to a fresh bouillon culture of the cholera spirillum and the mixture be injected into the peritoneal cavity of a guinea-pig the cholera spirilla are very quickly destroyed. Moreover, he was unable to produce this destruction when using serum from any other source than the body of an animal rendered immune to cholera infection, and the serum of such an animal would not produce a similar destruction of any other bacteria than the cholera spirillum. He accordingly concluded that this was a specific immunity-reaction. Later in the same year he made a preliminary report regarding a similar specific reaction of the typhoid bacillus (Deutsch Med. Woch., Nov. 29, 1894). In this he states that there are present in the serum of animals rendered immune to typhoid bacilli antitoxins which have a specific action against the typhoid bacillus but which do not influence the colon bacillus or other bacteria allied to the typhoid bacillus any more than does the serum of normal blood; that similar antitoxic bodies are present in the blood of patients convalescing from typhoid fever; and that by means of these specific antitoxins the typhoid bacilli can be differentiated from all other bacteria.

Pfeiffer produced these reactions only in the bodies of living animals. To Issaeff and Ivanoff is due the credit of first having demonstrated that, in the case of cholera vibrios, this specific immunity-reaction also takes place in a test-tube as well as in the body of a living animal (Zeitschr. f. Hygiene und Infektions-krankheiten). Bordet and Durham confirmed this, and Gruber showed that the same is true in the case of typhoid bacilli. Thus, if to a fresh bouillon culture of the typhoid bacillus a few drops of serum from the blood of an immunized animal, or from a person who has recently had typhoid fever, be added, the bacilli lose their motility and become agglutinated, forming small clumps which then in a few hours fall to the bottom leaving the supernatant fluid clear.

Widal seems to have been the first to make use of this specific reaction test in the diagnosis of typhoid fever, and it is largely due to his communications on the subject that the present methods of examination are used. These methods are well described by Johnston (N. Y. Med. Jour., Oct. 31, 1896). Widal at first obtained blood from a vein of the arm by means of a sterilized syringe, added the serum from this to a bouillon culture of typhoid bacilli, and kept the mixture at 37° C. for some hours. The characteristic clumping of the bacilli and clearing of the fluid were produced only by the serum from typhoid blood. soon simplified this by taking the serum from a few drops of blood drawn from the finger, mixing this with a drop of a fresh bouillon culture of typhoid bacilli, and examining the mixture under the microscope. In this way the agglutination and loss of motility could be directly observed. He also showed that dried blood, when again moistened and added to a typhoid culture produced the same effect as the serum, and Dr. Wyatt Johnston of Montreal has made use of this method of drying a few drops of blood upon a clean piece of paper and sending it to the laboratory for diagnosis.

The day of the disease upon which this reaction first occurs seems to vary somewhat. Widal says that on the seventh or eighth day of the disease the action of the serum is pronounced, and that it sometimes occurs as early as the fifth day. The serum retains this property for some time after the temperature becomes normal, in some cases for several years. Widal obtained the reaction in two cases in from three to seven years

after the disease, while Achard found it lacking in two cases after fifteen or sixteen years. The latter also found it present in the milk of a patient with the disease (*La Semaine Méd.*, 1896, p. 295). It is present in the tears and serum of blisters of typhoid patients.

The reports of typhoid blood examinations, so far as made, seem to confirm the claims made for this method of diagnosis. Park (Med. News, Nov. 14, 1896) says that in thirty-four cases of typhoid examined at the New York Health Department Laboratory thirty-three gave the characteristic clumping, which occurred either at once or in a few hours. The case in which the reaction was absent was convalescent forty days. In fourteen cases of other diseases the characteristic clumping did not occur. concludes, "If there is no specific reaction in a case sick over a week the diagnosis of typhoid fever may be excluded. If a marked reaction occur, then unless the patient had had an attack of typhoid fever within at farthest ten vears, the case is typhoid fever. The few in which a slight reaction only occurs must be left doubtful until later examinations clear up the case. Health Department of New York City is so certain of the practical value of these examinations in doubtful cases that it has already arranged methods for collecting and reporting without charge upon blood smears." In preparing the smears the tip of the finger is thoroughly cleansed and then pricked with a clean needle and two or three drops of the blood dried on a clean glass slide, or it may be dried on a clean piece of paper. The smear is then carefully protected and sent to the laboratory for examination.

Greene (*Med. Record*, Nov. 14, 1896) reports the examination of blood from eleven typhoid patients, the reaction being obtained in each case, and from fourteen patients sick with various other diseases, the reaction being absent in each case.

"At the Boston City Hospital the test has been made in about 50 cases of undoubted typhoid, of doubtful typhoid and of a few other diseases. In almost all the response has accorded with the diagnosis as previously made, or reached later with a clearer view of the conditions" (Ed. in Boston Med and Surg. Jour., Nov. 19, 1896). The cases so far as reported by Johnston of Montreal have given the same result.

Samples of blood have been collected from thirty persons by Mr. George Warner, of the Senior class of the Yale Medical School, and myself, and examined according to the above method. Of these, twelve were from patients sick with, or conva-

lescing from typhoid fever, according to the clinical diagnosis; one from a person who had had the disease one year before; thirteen from those sick with various other diseases, and the other four were samples of normal blood. None of the blood smears of these last two groups gave the characteristic reaction when added to a motile culture of the typhoid bacillus, nor did that taken one year after the disease though observed for an hour. Of the twelve typhoid specimens ten gave the characteristic reaction readily. One of the two which did not give it was from a girl five or six years old. The course of the disease had not been severe, and the specimen was obtained after the temperature had been normal for two weeks or more. From the other case giving negative results three different smears were obtained—one on the first day the patient was confined to the bed, another two days later and the third three days after the second. It was difficult to tell the exact duration of the disease from the history and symptoms, and later examinations of the blood will be made with interest. Excluding these last two, which can hardly be considered as fair tests, this method of diagnosis gave the same satisfactory results claimed for it by all who have made use of it thus far.

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THE question, "Who is the rightful owner of a prescription after it has been once filled by a druggist?" is of such interest to every reputable physician that it demands his considerate attention, inasmuch as it lies in his power to determine the ownership in each individual case. And that it is necessary for him to determine the ownership the increasing number of such cases contested in the courts is ample proof. The druggists are unanimous in their opinion. They believe the prescriptions Are they right? A prescription may be regarded as an order on a druggist for a drug or preparation of drugs, to be used by the patient for the relief of certain abnormal physical condi-When once filled the physician alone is qualified to advise continuance or discontinuance of its use, and he should insist upon the right, otherwise he unwittingly connives at a practice that is detrimental to his own reputation and prosperity, for the druggist is under obligation to put up every prescription presented at his counter, provided it be written by a physician of good standing.

The druggist is licensed by law to dispense drugs. He is responsible for error in filling prescriptions. If the prescription be lost and the medicine produces effects inimical to the life of the patient, the law holds him responsible and subject to suspicion and penalty. Reference to the prescription, also, in case of questionable results, determines whether the

physician or druggist be at fault. In the light of these facts can there be any doubt as to who should be rightful owner? quote the decision of a Cincinnati Court regarding this: "A druggist is under no obligation to furnish a copy nor permit any one to make a copy of prescriptions. When he has compounded a drug and delivered it to the proper party the paper upon which the prescription is written becomes his. Druggists keep prescriptions for their own protection. If, as the plaintiff testified, defendant had agreed to furnish plaintiff with a copy whenever he called for it, that agreement was gratuitous and without consideration, and therefore void." There is yet another aspect of this matter that appeals to many physicians, viz.: the advantages derived from the custom of returning prescriptions to the patients. Of such value is this considered that some physicians insist upon the return, threatening to no longer patronize the druggist if he retains them. The prescriptions in the patient's possession permits (1) criticism of former treatment under similar conditions; (2) it enables a succeeding physician to follow the same treatment; (3) to change the treatment perhaps advantageously or (4) to malign his predecessor. The latter belongs to the domain of quackery, and is not worth our atten-In regard to the first three, it cannot be denied but that they are of great benefit to a busy practitioner, but are they not more than over-balanced in significance by the evils resulting from the practice especially to the patient. These evils may be classified as follows:

- 1. Contracting drug habits.
- 2. Using drugs for conditions diametrically opposite to those indicated because of similar symptoms.
  - 3. Increasing the tendency to make patent preparations.
- 4. Causing indirectly unjust attacks upon the reputation and ability of a physician because of *misuse* of prescriptions.
- 5. Narrowing the sphere of usefulness of the physician by the use of former prescriptions so that he is often not called until the patient is in extremis, with a system already drenched with unknown drugs. There are thousands of men and women who are slaves to opium, morphine, cocaine, etc. Many of them attribute their fall to physicians and the charge is often justly made. Efforts have been made to bring about appropriate legislation in this matter but the remedy lies in the hands of the physicians. A "non repetatur" or "Retain this prescription," upon each prescription should be in universal practice, thus lessening the odium that is constantly thrown at our profession.

HALF a century ago a small body of men were gathered in the Massachusetts General Hospital to witness the first authentic demonstration of anesthesia during a surgical operation. The announcement by Dr. Willian Morton, that sulphuric ether would produce insensibility to pain was received with the traditional grain of salt by many members of the profession. But the matter was given a fair test and the verdict of Dr. John C. Warren, who performed the operation, that "This is no humbug," announced to the world that anæsthesia was no longer an experiment but an indubitable fact and that what the profession had so long fondly dreamed of was now an assured reality.

Fifty years have rolled by—fifty years of wonderful progress and yet, unless we except Sir Joseph Lister's great discovery, the achievement has not been paralleled. Antitoxins have come and gone—the never-failing cures for phthisis have been countless and have shared a common fate. Animal extracts of all sorts have been received with alternating approval and disapproval, and panaceas one by one have had their day. So through all the past five decades of progress the discovery of anesthesia stands preëminent.

On the 16th of October the fiftieth anniversary of the first public demonstration of surgical anesthesia was commemorated in the same hospital in which the original operation had taken place. It was a notable gathering—a concourse of the most eminent men of the time doing honor to the great event. And Boston, and Massachusetts, have done well to so fitly commemorate an American discovery—a discovery the farreaching effects and great beneficence of which the present generation can scarcely hope to equal.

The story can be told in perhaps no more expressive words than those of Dr. Oliver Wendell Holmes: "The knife is searching for disease, the pulleys are dragging back dislocated limbs, but the fierce extremity of suffering has been steeped in the waters of forgetfulness and the deepest furrow in the knotted brow of agony has been smoothed forever."

AFTER several years' agitation the proposed establishment of an Isolation Hospital in New Haven is not yet a settled fact. The Board of Health, guardian of the public sanitary interests, have been repeatedly prevented by city authorities from taking the initial steps toward its erection. Again and again competent and trustworthy counsel has forced before the city legislators the urgent and immediate need of such an institution. The reasons for, and advantages of, its existence have been thoroughly discussed and plainly shown. The Medical Association of the city, the intelligent lay press, and the more advanced and thoughtful citizens have shown their sentiment in the matter. Notwithstanding this the delay continues.

Furthermore, just now scarlet fever and diphtheria are spreading in the city in ever increasing numbers, creating "pest houses" on every side far more to be feared than any Isolation Hospital. Several schools have been closed in the hopes of keeping them under control.

If the Common Council delays now only to fix upon a suitable location for the building, the delay ought, in view of circumstances, to be speedily ended. The requisites demanded of a location are not so unique as to make a site almost impossible to find. Sites have already been pointed out where neither the nervous need fear contagion nor the landlord empty tenements. If, however, when a location is chosen, some one imagines himself damaged, he can be reimbursed, since money is one of the lesser considerations to the city while hastening this vital question to a successful issue.

# MEDICAL SOCIETY REPORTS.

NEW HAVEN CITY MEDICAL ASSOCIATION.—This Association held its usual monthly meeting Wednesday evening, October 6th, at the house of Dr. J. H. Townsend, Secretary of the Society. President Mailhouse presided. Dr. L. W. Bacon, [r., presented the case of a child of 15 months that developed a pyæmia subsequent to an attack of measles. When first seen the child was completely covered with abscesses. Scarcely a square inch of sound flesh could be found. At the first call sixty abscesses were opened, at second forty, and at later visits a hundred more. The child was then put in a water bath kept constantly at 100° F. The water was changed every four hours, and no antiseptics were used in the bath for fear of absorption. The bath was so arranged that the child was completely submerged except its face which was kept from sinking below the surface of the water by a towel slung across under the head and attached at either The object of the water bath was to offer a side of the tub. support to the body which would not irritate the cut surfaces, and at the same time cleanse the sores. The child emerged

from its bath of two weeks showing no ill effects whatever. Further treatment consisted of a few drops of brandy diluted with water, given every ten or fifteen minutes for two days, and in addition a little milk and water. Afterwards Bovinine was given at the rate of three teaspoonful doses every twenty-four hours. After two weeks of treatment, Gude's Peptonate of Fe was prescribed. In four weeks' time from opening of the first abscess the child had recovered.

Dr. Russell showed as a pathological specimen the excised uterus and appendages, removed by vaginal hysterectomy, of a woman of forty-eight years, who came to him complaining of uterine pain, menorrhagia, and whose cervix showed on examination an erosion, which was taken, by him and others called into consultation, to be an incipient carcinoma of the cervix. The specimen is remarkable in showing the very early stages of cancer of cervix. The woman made an uneventful recovery from the operation. Dr. Russell, in quoting authorities, said that Emmet advised hysterectomy in cases where there was "slight suspicion of carcinoma."

Dr. Francis Bacon took exception to such advice saying that "slight suspicion" is a very elastic term, and, furthermore, he believed, he said, that if statistics could be procured upon the subject, it would be found that nothing ever came of many suspicious cases of carcinoma of the cervix. His own experience would bear out such an opinion.

Dr. Leonard Bacon reported a case of a young man who came to him with vertigo, constipated, and appreciably jaundiced. The diagnosis was obscure. Later the young man was seen with a temperature of 104°-105°, subsequent to a chill. It looked very much like malaria. Quinine was given, but it did not control the disease. At a later visit the man was found in a comatose condition, following what seemed an epileptic convulsion. Bromides were given. He revived somewhat later, but two days afterwards had another epileptoid convulsion. He relapsed again into a comatose condition, dying without regaining consciousness. Post mortem showed typical epileptic, slate-color liver, heart enlarged, brain anæmic, but no brain lesion. The post mortem was, "Tendency to epilepsy, precipitated by malaria."

Dr. Fleischner reported a case of a woman twenty-nine years of age which finally developed into typhoid fever that ran its usual course, but which at first showed such peculiar symptoms as to be altogether misleading. She had obstinate vomiting, and

retching, and hiccough, pulse strong (130), temperature very erratic, bounding from subnormal to 103-104°. Constant nausea, which did not yield to treatment. Spleen was resistant to palpation. There was suppressed urine, and anæmia, but good heart sounds. Derangement of cerebrum was very pronounced at first. On giving diuretin urine was passed, then sparteine was given and the diagnosis began to clear. On the twelfth visit or the twenty-sixth day of illness the rose spots of typhoid fever appeared, and from that time on, the fever ran its normal course. The illness lasted in all forty-two days and though it seemed to be nephritis, gastritis, and meningitis in turn, the end showed it to be a very unusual case of typhoid fever.

Francis Verdi, Yale M. S., '94, and Edward Seymour Moulton, Yale M. S., '94, were then elected to membership in the Society.

HARTFORD COUNTY MEDICAL ASSOCIATION.—The semi-annual meeting of this Association was held in Hartford, November 21st. The President, Dr. George C. Jarvis of Hartford, opened the meeting with a paper upon the topic, "Our New England Stomach; Its Trials and Relation to Disease." This was followed by a paper on "Posture in Labor," by Dr. E. J. Mc-Knight. (Both these papers are to be published in full in this and the succeeding number of this journal.—Eds.)

Dr. Harmon G. Howe read a paper on "A Year's Work in Abdominal Surgery at the Hartford Hospital."

Five hundred operations were performed at the hospital during the year ending September 30, 1896, seventy-six of which were operations on the abdomen. There were forty-three cases of appendicitis, with three deaths, but there had been no deaths from this cause since January 1st, and two of the deaths which occurred were due to the low condition of the patients when admitted, from long standing of the disease. They would undoubtedly have died in a few hours if not operated upon. Many were operated on and recovered when it seemed almost impossible for them to recover, so extreme was the peritonitis or so dense the adhesions.

There were three deaths out of eleven operations for hernia, the fatal cases being of strangulated hernia. Only one case of strangulated hernia recovered. Too much stress could not be placed upon the necessity for haste in operation upon these cases.

There were three operations for fecal fistula, all successful. One case of psoas abscess was successfully operated upon, it having been diagnosed by abdominal section, and after the closing of the abdominal wound opened freely on the side by an extra peritoneal incision. The three cases operated on for ovarian cysts—one of which was double—all made a good recovery. Four hysterectomy operations were performed, all under urgent necessity, and three died. Three cases of intestinal obstruction were operated on as a last resort. Two were fatal and there was one recovery. Out of the seventy-six operations on the abdomen there were fourteen deaths. This gives a death rate for all cases of eighteen per cent. The operations were performed by members of the hospital staff, Drs. Jarvis, Davis, Storrs, Ingalls, Campbell and Howe, except two operations upon the bowels by Dr. Wiggins, assisted by Drs. Ingalls and Howe.

The paper was followed by remarks upon the favorable report by President Jarvis and Dr. Storrs. Dr. Rankin asked how to best transport an appendicitis case, and Dr. Howe replied that they should be carried supine by all means. Dr. Root spoke of sterilizing in private houses where operations were obliged to be performed by filling the room with steam beforehand, and thus "wetting down" the bacteria during the time of operation.

Dr. Theodore G. Wright reported four cases of placenta previa. First case: Mother of several children had very profuse hemorrhage, and child was removed dead by forceps after the removal of the placenta. Mother died in a few minutes. Second case: Woman aged twenty-five years, mother of one child three years old; began flowing badly at eighth month, and child was delivered dead, the placenta being removed from position over os uteri. Mother survived only after frightful hemor-Third case: Woman thirty-seven years old had borne six children; had severe hemorrhage, but child and mother both Fourth case: Woman, mother of four children, had survived. placenta prævia. This was removed and the gush of blood was Both child and mother survived. The first three enormous. cases occurred in latter part of eighth month.

Dr. Parsons believed that whenever hemorrhage manifests itself, the sooner prompt delivery is instituted the better.

Dr. Sullivan reported a case of abscess of kidney.

Upon operation no kidney whatever was found, the abscess having obliterated it entirely. Healing occurred in two weeks' time, all secretion of urine became normal and patient is now completely restored.

Dr. F. S. Smith, delegate from Middlesex County, reported a case of malignant growth on right arm, enlarging very rapidly.

Pain became excessive, and merely to relieve the suffering the arm was amputated at the shoulder. After this patient recovered uneventfully.

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New Haven City Medical Association.—This society held its regular monthly meeting Wednesday evening, November 4th, at Stewart's, President Mailhouse presiding. Dr. Leonard Bacon, Jr., reported the following case: A cigar maker, forty years of age, came to his office two weeks ago suffering from severe headache on right side of face. Pain worse when he bent over. Patient had no dyspeptic trouble, no malaria, no signs of typhoid. Had decayed teeth which he was advised to have removed. He did so and felt better. He had a discharge from his nose which was chronic. Treatment: Iodol and boric Nose got better, but headache did not. Dr. Bacon thought trouble might come from his eyes so he advised patient to see an ophthalmologist. Saw Dr. Alling and he reported that · he suspected the case to be disease of right antrum. Treatment: Second molar tooth on right side was drawn; the antrum was bored into, with electric drill. There was no escape of pus, but drill had a fetid odor. A stream of water was thrown into cavity and washed out some stinking pus. Exploring by aid of electric lamp in the mouth, it was found that above the alveola process it was not translucent, showing that there was some obstruction. The following day Dr. Bacon enlarged the hole and put in a glass tube. Patient was directed to wash out the cavity with Seiler's solution. Some pus came away after the At night, by aid of lamp, the right antrum first injection. was much more illuminated. Dr. Bacon thought that three or four days was a short time in which to cure disease of the antrum.

Dr. Swain considered the following case an interesting one. An elderly woman brought her son, twenty years of age, to his office a few days before, to have his head examined to see if he was of sound mind. The young man fell out of a baker's wagon a few days before and was found in the road unconscious and taken home. Ice was applied to his head; he would wake up and go directly to sleep again. On Monday he arose as usual and delivered his goods correctly. He was tactiturn and acted queer. Went back to store and waited on customers until four o'clock. The peculiarity of the case was that the young man could remember nothing he had done from Sunday night to Tuesday morning.

Dr. Bacon suggested this might be a case of Variation of Personality; that the young man spent forty-eight hours in a hypnotic condition. He thought by a hypnotic suggestion this young man could be thrown into an hypnotic state and remember what he did on Monday.

Dr. McDonnell related a case of a young woman thirty-one years of age who had come to his office two weeks before, with an affliction of the ears and cheeks, having the color of a fresh black eye. This discoloration was on each cheek, size of a trade dollar. It was waxy and cooler than other parts. This was a case of Raynaud's Disease. Kidneys and heart were examined and found sound. He had seen five cases before but the disease showed its signs in the fingers or toes. Treatment: Quinine and strychnine. Locally, 5 per cent resorcin soap. In a week's time she was much improved.

Dr. Daggett illustrated a case showing the necessity of a guarded prognosis in pneumonia. A young married woman had penumonia of the right side, lower lobe, and later the other side became affected. She was taken to the hospital, kept on light diet, rested well and soon began to convalesce. The doctor had told friends the patient would soon be well. On the sixth day patient had pain in left side, rapid respiration, weak and rapid pulse, even after giving strychnine and whiskey. Patient died in eighteen hours. It was impossible to obtain a post mortem, but it was supposed patient must have died of heart clot, corresponding to heart clot in pneumonia as referred to in Flint's Practice.

Dr. Beckwith exhibited an aseptic syringe made by Lauen and used in Paris in treatment with antitoxin. The syringe was of ground glass, with graduated cylinder in cubic centimeters, and having an irrido-platinum needle. Its advantage was its simplicity and aseptic qualities.

The question for the evening was "Tonsilitis." The subject was presented by Dr. Eliot. This was discussed by several members.

Dr. Fleischner considered it advisable to regard follicular tonsilitis as suspicious of diphtheria, especially when diphtheria is epidemic. The meeting then adjourned.

HARTFORD MEDICAL SOCIETY ANNIVERSARY.—The celebration of the fiftieth anniversary of the Hartford Medical Society was held at Fraternity Hall Y. M. C. A. building, October 26, 1896, President Melancthon Storrs presiding. There was a large

attendance, many who were at sometime connected with the Society but who are at present practicing elsewhere, being among the number.

The meeting was opened with an introductory address by President Storrs, who called for a rising salutation to Dr. Gurdon W. Russell, the only surviving founder of the Society, who has been a member continuously since its foundation. Dr. Storrs paid a pleasing tribute to the worth and power of Dr. Russell as a physician and man, and briefly sketched the history of the Society and the difficulty encountered in establishing it.

The historical address was delivered by Dr. Russell. It was universally regretted that, owing to the lack of time, Dr. Russell was forced to abbreviate his address, but as it is the intention of the Society to have the address published in pamphlet form an opportunity will be presented to the members of the Association to read this very instructive and interesting historical resume. Among the subjects treated in this paper was a very thorough review of the "Essay of Dr. Nathan Smith on Typhus Fever," in which the cold water treatment, the modern method of dealing with hyperpyrexia, is recommended.

Dr. Russell was followed by Dr. Horace S. Fuller, who read a paper on "Our Deceased Members, and Incidents Connected with the Later Years of the Society."

Dr. Henry P. Stearns delivered an address on "Esprit de Corps."

The last paper of the afternoon, "The Present and Future of the Hartford Medical Society, as Suggested by a Study of its Fundamental Enactment," by President Melancthon Storrs, was postponed until November 9th.

The meeting then adjourned for dinner to the Hotel Hartford at which the past and present members of the Society assembled.

The anniversary ceremonies were in charge of a committee consisting of Dr. George R. Shepherd, Dr. Samuel B. St. John and Dr. G. Pierrepont Davis.

### ITEMS OF INTEREST.

The State Board of Health of Indiana have ordered all health officers of the State to provide themselves with a linen duster and skull cap to be carried in a separate bag and to be worn

whenever they enter a building where a contagious disease exists.

The continued impossibility of filling vacancies in the medical corps of the navy still exists. There were 341 applicants as assistant surgeons in the navy. Of these, thirty-six applied for permission to appear before the naval examining boards. Of the thirty-six, twenty-two appeared before the boards and of this number, four were rejected physically and twelve rejected professionally, leaving only six out of the 341 original applicants, representing every section of the country, who were found qualified for appointment as assistant surgeon.

The mortality report for October has been received from 164 towns in the State. There were 1,097 deaths reported during the month. This was 91 less than in September, and 11 more than the average number of deaths in October for the five years preceding the present. The death-rate was 15.6 for the larger towns; for the small towns, 14.9, and for the State, 15.4. The deaths from zymotic diseases were 174, being 15.8 per cent of the total mortality. The following number of cases of infectious diseases were reported to the health officers: Measles 74, cerebro-spinal fever 1, scarlet fever 127, diphtheria and croup 180, whooping cough 20, typhoid fever 189.

Prof. Dr. Eugen Baumann, professor of Chemistry in the University of Frieburg, died suddenly on November 2d. Dr. Baumann's investigations were chiefly in the sulphur compounds of the body. But his latest notable discovery was concerning the presence of iodine as a normal constituent of the thyroid gland.

The "Memorials of the Faculty of Physicians and Surgeons of Glasgow," by Alexander Duncan, claims that the first ovariotomy was performed by Mr. Robert Housten of Glasgow in 1701, thus robbing America of one of her greatest surgical triumphs, as Ephraim McDowell of Kentucky did not perform his operation until one hundred years after.

The English Government has appointed a commission to investigate the bubonic plague now prevailing in India. The committee is to learn all it can concerning the origin and nature of the disease; of its contagion and inoculation; whether it can pass between man and animal; its period of incubation; the duration of the power of the convalescent to infect. The committee is asked to report not only on its history but to recom-

mend any measures which seem to be indicated for arresting its further spread.

There was sixty-four fatal cases of diphtheria for the week ending November 7th in London. This number is larger than those recorded for the corresponding weeks of the last ten years.

Dr. Nansen of Arctic fame, in writing to the *Daily Chronicle* of London says, "If sufficient attention and care are given to the provision department in fitting out an expedition" scurvy cannot appear. It is, therefore, a disease which ought to be forever banished from Arctic expeditions. Before Dr. Nansen it had caused high mortalities.

In 1894 the birth-rate of France was 22 to every 1,000 inhabitants, a decrease of 2 per cent in a decade. This is believed to be the lowest birth-rate in the world. The rate in America according to Dr. Billings' latest figures is nearly as low. In 1880 our birth-rate was 30.95 to every 1,000, and in 1890 had fallen to 26.68. It is supposed now to be about 24.50; not 3 per 1,000 higher than the rate which frightens France.

The University of Paris will hereafter require of foreigners the possession of a literary degree as a prerequisite to graduation from its medical department.

It appears from the last report of the Registrar-General that the proportional mortality in England from cancer is four times greater than it was half a century ago. A remarkable decline in the death-rate from phthisis and tuberculous diseases is noticed.

A laboratory of bacteriology has been established at the University of Pennsylvania in connection with the courses in veterinary medicine, to be under the supervision of the State Live Stock Sanitary Board. Special attention will be given to the study and investigation of the diseases of cattle and poultry. Arrangements have also been made for the preparation of tuberculin for use in treatment of tuberculosis in cattle.

A competitive examination will be held in Washington, February 3, 1897, for the position of assistant surgeon in the United States Marine Hospital. The salary is \$1,600, quarters, light, fuel. Information can be obtained from the Surgeon-General of the Marine Hospital service.

Kikuzi, a Japanese army surgeon, has introduced, with great success, charcoal, freshly prepared by burning rice straw, as a dressing on the battlefield and in military hospitals.

# CONNECTICUT PRACTITIONERS REGISTERED IN OCTOBER.

| Names.                       | Basis of Registration.        | Where Registered. |
|------------------------------|-------------------------------|-------------------|
| Geo. W. Vreeland, M.D.,      | Coll. Phys. and Surg., N. Y., | Greenwich.        |
| Herman Baning, M.D.,         | N. Y. Eclect. Med. Coll.,     | Greenwich.        |
| Chas. H. Borden, M.D.,       | Coll. Phys. and Surg., N. Y., | Kent.             |
| Sam'l E. Holtzman, M.D.,     | Med. Dept. Univ. of N. Y.,    | Greenwich.        |
| Joseph H. Desmairais, M.D.,  | Bellevue Med. Coll., N. Y.,   | Greenwich.        |
| Rutherford D. Canedy, M.D.,  | Coll. Phys. and Surg., N. Y., | Greenwich.        |
| C. J. Massinger, M.D.        | Jeff. Med. Coll., Phila.,     | Greenwich.        |
| H. A. Brown, M.D.,           | Med. Dept. Univ. of Vt.,      | Thompson.         |
| L. A. C. Von Burscher, M.D., | Univ. of Penn.,               | Greenwich.        |
| Frank A. Keller, M.D.,       | Albany Med. Coll.,            | Greenwich.        |
| Edw. T. Buck, M.D.,          | Long Island Med. Coll.,       | Greenwich.        |
| Claudius W. Gillette, M.D.,  | Jeff. Med. Coll., Phila.,     | Westport.         |
| Paul Plummer, M.D.,          | Med. Dept. Univ. of Vt.,      | Collinsville.     |
| James H. Naylor, M.D.,       | Med. Dept. Univ. of Vt.,      | Hartford.         |
| Wm. H. Dyer, M.D.,           | Med. School of Maine,         | Waterbury.        |
| Wm. D. H. Namar, M.D.,       | West. Penn. Med. Coll.,       | Hartford.         |
| Thom. B. Enders, M.D.,       | Coll. Phys. and Surg., N. Y., | West Hartford.    |
| Chas. T. Curtis, M.D.,       | N. Y. Univ. Med. Coll.        | Noroton Heights.  |
| Henry W. Mitchell, M.D.,     | Univ. of Vt. Med. Dept.       | Thompson.         |
| Mary A. Ayer, M.D.,          | Wom. Med. Coll. of Penn.,     | Danielson.        |
| Henry E. Franck, M.D.,       | Cleveland Med. Coll.,         | Bridgeport.       |
| Frank S. Snow, M.D.,         | Albany Med. Coll.,            | Hartford.         |
| Henry H. Peachey, M.D.,      | Med. Coll. of Ohio, Cincin.,  | Greenwich.        |
| G. W. Conterno, M.D.,        | Long Island Coll. Hosp.       |                   |

# CONNECTICUT PRACTITIONERS REGISTERED IN NOVEMBER.

| Names.                       | Basis of Registration.        | Where Registered. |
|------------------------------|-------------------------------|-------------------|
| Frank F. Celce, M.D.,        | Univ. of Penn.,               | Suffield.         |
| Garrett V. Johnson, M.D.,    | Albany Med. Coll.,            | Salisbury.        |
| Chas B. Borden, M.D.,        | Bellevue Hosp. Med. Coll.     | Stamford.         |
| George D. Wright, M.D.,      | Bellevue Hosp. Med. Coll.,    | Bethel.           |
| Frances Ann Carpenter, M.D., | Wom. Med. Coll. Penn.,        | Litchfield.       |
| Fred. B. Krell, M.D.,        | Jeff. Med. Coll., Phila.,     | Naugatuck.        |
| Marcus R. Peterson, M.D.,    | Long Island Coll. Hosp.,      | Bridgeport.       |
| James H. J. Flynn, M.D.,     | Yale Univ. Med. Dept.,        | New Haven         |
| Jacinto Zaratt, M.D.,        | Univ. of Penn., Phila.,       | Greenwich.        |
| Simon P. Goodhart, M.D.,     | Yale Univ. Med. Dept.,        | Greenwich.        |
| Henry B. Douglass, M.D.,     | Coll. Phys. and Surg., N. Y., | Greenwich.        |
| T. W. Cleaveland, M.D.,      | N. Y. Univ. Med. Dept.,       | Greenwich.        |
| Gilbert A. Ashman, M.D.,     | Long Island Coll. Hosp.,      | Greenwich.        |

# HOSPITAL AND CLINIC NOTES, ETC.

On September 15th a girl five years of age was brought to the New Haven Hospital with a history that while playing with fire her clothing had ignited and she had been burned. examination it was found that there were several burned spots on the right arm, but also one much larger spot on the side and back of the body (about the size of the palm of the hand) and another still larger on the buttocks running from the gluteal fold around to the groin and on to the thigh. These burns represented a surface of about 100 square inches. The burned surfaces were at first dressed with vaseline, then with iodoform liniment spread on sterlized linen. On October 4th, however. twenty days after admittance to the hospital (from fear of iodine poisoning), the burn on the side and back of the body received a change of dressing in a plentiful dusting of acetanilid, the burn of the buttocks in one of powdered glutol. About two hours after this dressing had been put on the child began to show signs of acetanilid poisoning and became deeply cyanotic. pulse was weak, rapid and fluttering. The lips were blue. When the case was seen by Dr. Carmalt in his rounds the nature of the poisoning was suspected, the acetanilid washed off to prevent further absorption and strychnine injections were administered to relieve the symptoms which disappeared slowly. This is the second case of acetanilid poisoning reported from the New Haven Hospital within a year. A case, too, was reported from the Dispensary in New Haven about a year ago. where it is in universal use as a dressing for wounds.

On November 16th a boy five years of age was admitted to the New Haven Hospital with the following history: In 1894 he had had pneumonia and had always been weak since that sickness. On October 9th, twenty-three days before admittance to the Hospital, the patient was put to bed complaining of headache and vomiting. The vomiting persisted for two days, the headache for ten. During all this time the patient had some temperature and slight cough. On entrance to the Hospital there was a cough but no expectoration, and there were short hurried respirations. The left side of chest, in which the child had complained of pain since October 19th, or thereabouts, showed on examination an inflamed area at the left edge of the

sternum between the fifth and seventh ribs. The intercostal spaces were very full and the area of inflammation fluctuating. The whole side of the chest was dull and gave no respiratory or The inflamed surface remained about the same for a week. The pulse continued weak and rapid, the respiration short and jerky. On November 19th Dr. Carmalt operated upon the patient and by aspirating the pleural cavity over the inflamed spot drew off pus to the amount of forty-four ounces. The pulse improved from time of the operation, the temperature fell to normal. Since the operation the left lung is fuller and the cavity of abscess smaller. On bacteriological examination by Dr. Bartlett the pus was found to contain diplococci which on cultivation gave a pure culture of pneumococci. By injecting one-half c.c. of the bouillon culture into the abdominal cavity of a rat death followed within twenty-four hours. abdominal cavity of the rat the capsuled diplococci were obtained in abundance.

Apparently the pneumococci had remained dormant in the pleural cavity for two years. There is every reason to suppose that the pleurisy dated from the old pneumonia from which the patient's history would seem to show he had never recovered.

At the Norwich Hospital on November 12th a parotid tumor the size of a hen's egg, was removed from a man fifty-four years of age, having a history of cachexia. The abscess or tumor apparently began forming about four years ago, but had remained quiescent till last summer when it began growing very rapidly and became very painful, due apparently to rough usage it had received in a clumsy attempt at diagnosis. It fluctuated and was opened about four weeks before removal and discharged a pus-like material. It was closely adherent to the angle of the jaw. On the date mentioned it was opened and enucleated successfully. No enlarged glands were found in the neck. The diagnosis was adinocarcinoma, and on pathological examination at the Yale Medical School by Dr. Bartlett this was proved to be true. The operation was performed by Dr. Tingley.

About four weeks ago a boy two and a half years of age was brought to the Norwich Hospital with a large tongue. It had attained such size as to justify operative interference. In operating the right lingual artery was tied, but the left could not be, on account of the very great infiltration of the tissues of the neck and the hypertrophy of the salivary glands, the parotid and the submaxillary. Therefore, one deep suture was passed through the median line at the base of the tongue to control the hemorrhage. Then a V-shaped piece was removed from the tongue the sides of the V being one and one-half inches in length and converging backward, and the sides of the tongue were brought together again by deep sutures. The mouth was swabbed out and the wound kept clean with antiseptic washes. The wound healed readily and the tongue promises to develop symmetrically with the rest of the body. The operation was performed by Dr. Butler.

## BOOK NOTICES.

A Treatise on Surgery. By American authors. Edited by Roswell Park, M.D., Professor of Surgery and Clinical Surgery, Medical Department, University of Buffalo. In two volumes. Volume I., General Surgery and Surgical Pathology. Volume II., Special Surgery. Price per volume, cloth, \$4.50; leather, \$5.50. Net. Lea Brothers & Co., Publishers, Philadelphia and New York.

Twentieth Century Practice of Medicine. Volume VII. Diseases of the Respiratory Organs and Blood, and Functional Sexual Disorders. Edited by Thomas L. Stedman, M.D. William Wood & Company, Publishers, New York.

The Nursing World Bedside Record, for the use of Physicians and Trained Nurses. Published by the Imperial Granum Company, New Haven, Conn. This record contains a day and night record to last through six weeks of illness, with columns for time, pulse, respiration, temperature, and medicine, with lines for entry of notes upon heart, mind, pain, chill, sweating, vomiting, character of urine, etc. There are special pages for temperature charts, for prescriptions, and for subsequent history with miscellaneous memoranda of the case. The work is a very ingenious and valuable record for the bedside.

## MEDICAL PROGRESS.

- C. Gerhardt (Centralblatt zür innere Med., 1896, No. 20) reports the case of a baker who became suddenly subject to pain in the left side, labored breathing, cough and pain in the legs. Dullness, most apparent posteriorly, over the right apex was determined on percussion. Vocal vibration was most distinct to the applied finger tips; the respiration was harsh and rales continuous. The sputum was, in appearance, much like starch paste. Examined under the microscope amorphous and cylindrical masses, made up of starch granules and round cells, were found. Sputum treated with iodine solution became characteristically blue. Expectoration of starch continued for two weeks after the patient left his work. From this and three other similar cases Gerhardt observes the probable cause of the asthma of millers and bakers.
- Dr. J. F. Smith and Mr. Frederick Treves (London Lancet, 1896, No. 8, Vol. II.) give an account of two cases of pulmonary abscess. Excessive fetor of the breath was the most significant symptom. Treatment was operative. A triangular-shaped flap over the diseased area was raised and portions of the ribs exposed were excised. In one case parietal and visceral pleuræ adhered to the point laid bare. A direct incision into the lung gave vent to very offensive pus. In the other case the pleuræ did not adhere. A trocar introduced into the lung failed to draw pus, and an incision was made, passing through an inch of healthy lung tissue, before the abscess cavity was reached. In both cases the cavity was scraped, dried and stuffed with iodoform gauze, the end being passed through an opening made in the skin flaps, which was sutured in place. After four days the gauze was removed. Recoveries followed in both cases.
- J. Homer Coulter, A.M., M.D. (Journal of the American Medical Association, Nov. 7, 1896), reports on the diagnosis and treatment of quinsy, that during the first thirty-six hours there is much difficulty in making a diagnosis, but that inability to expectorate is almost pathognomonic. As treatment, Dr. Coulter used lactophenin in ten-grain doses every three hours. The lactophenin was given to the exclusion of all other remedies, and in twelve cases of quinsy gave most gratifying results, the average time of relief being about four hours after administration. In comparison with salol, lactophenin is more prompt, and relieves the pain and reduces the fever with more certainty.

Linger (Wiener klin. Wochen, 1896, Nos. 15 and 16) has made a study of the skin lesions that occasionally appear in typhoid fever as papules, each of which has a pustule on its summit. The blood flowing from these small sacculated abscesses after incision, when examined bacteriologically, revealed the presence of typhoid baccilli in four out of five cases. A doubtful case was diagnosed by the culture. Baccilli were not found in sections of the papules. Linger believes the eruption a direct infective process in the skin.

BLOOD CHANGES IN ANÆMIA.—S. V. Moraczewska (Virchow's Archiv. CXLIV.) gives the results of blood examinations in a number of pathological conditions characterized by anæmia. The specific gravity, alkalinity, the amount of solid substance, number of corpuscles, and the percentage of hæmaglobin were These observations show that in pernicious determined. anæmia the alkalinity of the blood is markedly diminished; the specific gravity is high, the number of blood corpuscles very small, and the red blood corpuscles contain an excess of coloring matter, and the nitrogenous materials increased. Chlorosis is characterized by diminution of the alkalinity and high specific gravity of the blood, and by numerous blood corpuscles containing little hæmaglobin. In case of carcinoma the alkalinity of the blood is high, the specific gravity diminished, and the red blood corpuscles relatively numerous, but contain little coloring matter, and the amount of dry substance small.

Three Successful Cæsarean Sections Upon the Same Woman.—C. N. Van de Poll, M.D., of Amsterdam, reports in the Centralblatt für Gynäkologie this unique case: The first two sections were performed by the late Prof. Van der Mey, and reported by him several years ago. Her pelvis was a generally contracted rachitic one, and her first three pregnancies resulted in the death of the child. She was told that a Cæsarean section would be necessary if she became pregnant again and wished a living child. Van der Mey performed this twice, each time delivering a healthy child. Seven years after the second one Van de Poll delivered the third child, but was forced to do a Porro's operation on account of the broad, firm adhesions between the lower uterine and abdominal walls. The child lived and the mother is now perfectly well.

#### ALUMNI AND SCHOOL NOTES.

At a recent meeting of the Dispensary Board of New Haven the following new assistants were appointed in the different clinics: Medical Clinic—W. M. Kenna, M.D., '92; F. C. Bishop, M.D., '95. Surgical Clinic—L. C. Sandford, M.D., '93. Ear and Throat—F. N. Sperry, M.D., '94; F. C. Bishop, M.D., '95.

The number of college graduates in the Medical School is twenty-seven—Seniors 11, Juniors 6, Second Year 6, Freshmen 4.

- 1892. John A. Hartwell, M.D., of New York City, is the head coach of the Yale foot-ball team this season.
- 1892. M. J. Husinsky, M.D., has removed to Hartford, Conn.
- 1893. L. C. Sandford, M. D., has opened an office as Physician and Surgeon at 216 Crown street, New Haven, Conn.
- 1895. A. C. Williams, M.D., has located in Springfield, Mass.
- 1895. J. L. Kelly, M.D., has taken an office in New Britain, Conn.
- 1895. J. H. J. Flynn has opened an office at 426 Howard avenue, New Haven, Conn.
- 1896. J. S. Maher, M.D., is assisting in the Vanderbilt clinic, New York City, and may be found at 143 W. 63d street.
- 1896. Irwin Granniss, M.D., 152 E. 27th street, New York City, is connected with the New York Post-Graduate School.
- 1896. W. S. Kingsbury, M.D., has an appointment until July 1st, 1897, at St. John's Hospital, Lowell, Mass.
- 1898. Alfred H. Hine has been taken to the University training table and played half-back on the University eleven in the Yale-Princeton game.
- 1898. N. G. Watson is one of the alumni editors of the Western Maryland College Monthly.
- 1898. J. S. Loomis spent a part of November at the Bellevue Hospital, New York City.
- 1900. J. W. Ives is assisting in the laboratory work in the Chemical Department.
- 1900. W. E. Kirk won the two-mile bicycle race at the Fal Athletic Games at the Yale Field.

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# AN EPITOME OF AN ADDRESS ON "INJURIES TO THE HEAD."\*

BY ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BUFFALO.

There would appear to be but little new worth saying on the subject of injuries to the head, and the few words which I shall say to you to-day are with reference rather to endocranial lesions than external injuries. They are the outcome of a careful study of recent literature as well as of modern methods of treatment. External injuries demand general treatment according to everywhere accepted tenets, but internal disturbances of the brain are so far removed from sight and recognition as always to afford room for doubt and for study. So even if I have already presented much of what I may say to you in a recent monograph (vide Dennis' "System of Surgery by American Authors," Vol. II.), I may be pardoned for asking your attention again to the following presentation of facts.

The present status of our knowledge concerning injuries to the endocranium has been in the main due to the establishment of the fact that all parts of the brain do not functuate alike. It is in the light of such localization, and of modern experimental study and clinical observation, that older views and statements regarding the pathology of concussion are to be entirely revised. In fact my own teaching in this regard is now quite different from that which I gave out fifteen years ago, which latter was based entirely upon the statements of older writers. Purely localized pressure has virtually always the same results as would a localized injury to the same parts. In general traumatic dis-

<sup>\*</sup>Delivered before the New York State Association of Railway Surgeons, November 17, 1896.

turbances of the entire brain the greatest danger, next to actual tissue destruction, comes from disturbances of the circulation, both of blood and lymph, by which, (1) function is perverted, usually temporarily; (2) nourishment is affected, this being usually permanent; (3) ædema or other acute accidents are produced and precipitated; (4) and lastly a foreign body (clot), produced, which causes most prompt and unmistakable effects.

Magendie taught us that the most important content of the endocranium, in its surgical relations, is the cerebro-spinal fluid. By alterations in its amount and tension are produced most rapid changes of pressure, and consequently of space, in the brain itself; these alterations being even greater than can be produced by change of intra-venous pressure. Between the fixed and free cranial walls and the exceedingly accommodating spinal canal there is an easy communication. The subdural space extends forward along the optic, olfactory and auditory nerves, as well as posteriorly down the entire length of the spinal canal. The latter is a complicated, elastic tubular reservoir, with lateral prolongations along the spinal nerves; moreover there is free communication between the cranium and the spinal canal. The subarachnoid space permits also free interchange between the ventricles, endo-cerebral spaces, and the peri-vascular sheaths. on the one hand, and the spinal subarachnoid space on the other. The foramen of Magendie constitutes the gateway between the former and the latter. Aside from changes in volume of the cerebro spinal fluid it must also be remembered that with any perceptible elevation of blood pressure inside the skull there is escape of lymph, also, into the lymph spaces. The amount of blood contained within the cranium is furthermore subject to constant change, and by forcible projection, as from violence, is capable of doing harm by itself, without reference to the other fluids already mentioned.

The elasticity of the spinal membranes is much greater than is generally realized. The possibilities of the spinal reservoir as such cannot be appreciated without careful experimental demonstrations by injections; even the soft fat between the vertebræ may be impelled or forced into the inter-vertebral foramina by augmented intra-meningeal pressure, all of which means that accommodation is provided for such fluid as may be forced out of the cranium by any pressure, whether this pressure be momentary or continuous. It must be remembered, however, that the enforced escape of this fluid occurs sometimes at the expense of the integrity of the surrounding structures. In this way it usually

results that when the volume of blood within the cranium is augmented, that of the cerebro-spinal fluid is decreased. In exceedingly mild degree this occurs with every respiration; still more markedly with changes of position; the fluids contained within the brain composing the real compressing causes, the nerve tissues being the sufferers.

The importance of this exceedingly free communication between the cranio-spinal cavities has much to do, not only with explaining the mechanism of concussions and such injuries, but also with the explanation of the exceedingly rapid spread of infection in every direction. Once given, for instance, an infectious basal meningitis and it takes but a few hours before the dura of the entire length of the spinal canal is involved, while within a few hours more the infection may be traced along the sheaths of the lowest spinal nerves. There is, therefore, much reason for insisting upon a wider recognition of these anatomical data than has been generally appreciated. They furnish the key not merely to so-called concussion symptoms, but to many if not most of the irritative and paralytic phenomena attendant upon, as well as minute extravasations so often seen in the brain, cord and membranes; because whenever minute lesions or minute ecchymoses have occurred as the result of damage done by forced variations in pressure, there will be consequent necessity for a repair that will always leave reminders in the way of perverted function.

The most significant phenomena attendant upon pure concussion (i. e., shock) can be produced not only by severe blows, but by a series of rapidly repeated light taps; symptoms, for instance, such as muscle relaxation, disturbed sensibility, circulatory disturbances, or even complete insensibility, as Koch and Filehne demonstrated in 1874. In their experiments the blows were generally repeated at about the rate of two per second, upon the parietal region; in consequence whereof temperature always sank, the respiration rate was slackened and the pulse fell, though reaction with return to normal followed after a few hours.

In 1878 Duret insisted upon violent precipitation of cerebrospinal fluid against that portion of the skull opposite to the point of injury, with resulting violent distension in the direction of the violence, as an explanation of concussion. In consequence of such injury instantaneous changes are produced in the shape and size of the ventricles, whose contained fluid is violently projected out of them, via the acqueduct of the Sylvius, into the

fourth ventricle; all of which produces a severe form of *shock*, in its surgical sense, with demoralization of all muscle phenomena. Duret studied this condition most accurately and described three successive stages which are usually easily recognized.

1. Stage of excitation, with tetanic muscle spasm, perhaps with expulsion of urine and feces, and sometimes with profuse salivation. There occur also increased vascular pressure, heart irregularity, even stoppage, and respiratory syncope. This stage is usually very brief. 2. Stage of paralysis, characterized by muscle relaxation and, instead of tetanic spasm as above, insensibility, rapid respiration, slow pulse (from paralytic congestion of the brain) and vascular relaxation. 3. Stage of reaction, with rise in temperature, mental excitement, perhaps delirum or even mania. While Duret worked this all out most carefully upon animals, I ask who among us can say he has not seen similar conditions in actual practice?

Bouchard of Bordeaux, in 1886 showed that a blow delivered during inspiration, when the brain is better floated on its so-called "water-bed," would be less serious than a blow of equal violence delivered during expiration, when the cerebro-spinal fluid is forced out of the cranium and the brain is in more intimate contact with the bone.

When Duret made a small opening in the temporal region and injected with some force a small amount of non-absorbent fluid, he produced instantaneous symptoms of brain concussion, but he always found minute and sometimes large ecchymoses in the neighborhood of the fourth ventricle, showing that when pressure quickly forced out the contained fluid from the lateral ventricles into the fourth, injury was always done along and about the aqueduct of Sylvius.

Thus it usually happens that a blow upon the head by a blunt and heavy object may instantaneously disable a person, while a sharp weapon, like the sabre, may even split the skull and produce much less immediate disturbance—as Stromeyer years ago demonstrated.

I now deny that these cerebral concussions, so-called, result from a condition of molecular disintegration without macroscopic changes. This hypothetical explanation was never susceptible of demonstration, although it must be granted that death does occasionally follow after injuries to the head where, upon careful examination of the brain, no changes sufficient as an explanation for death are discovered. In too many of these instances, however, there has been failure to examine other regions of the

body. In consequence rupture of the heart, intra-spinal hemorrhages, fat embolism, etc., which were the real causes of death, have been too frequently overlooked.

The position of the most advanced teachers of to-day is practically this, that concussion of the brain, as formerly taught and described, meaning thereby endocranial disturbances serious enough to produce extensive and numerous symptoms, without lesions other than molecular disturbance, is but little more than a hypothetical condition almost unsupported by evidence. I may say, practically without opportunity for successful contradiction, that such symptoms never result from injury to the cranium and its contents, without leaving in the brain or in the membranes evidences which are easily recognizable by the naked eye, such evidences themselves being proof of something more than mere temporary molecular disturbances. On the other hand there is ample evidence, if not from clinical experiments with human patients, at any rate from experimental studies in animals, to justify this position. Any injury to the head which produces recognizable and more than slight temporary symptoms, leaves within the cranium and somewhere within the cerebro-spinal nervous system, minute lesions, ecchymoses or effusions, which take such a case at once out of the category of concussion and may well place it where it belongs, under Dupuytren's classification, as a case of contusion. In other words, pure concussion of the brain is perhaps conceivable but is rarely if ever met with, least of all as a serious condition.

What, then, is the condition into which so many patients are thrown after more or less serious injury to the head, which used to be called concussion, or sometimes called by the still milder term "commotion"? Such cases belong entirely within the category of shock, surgical shock, and may be imitated by blows upon the chest, abdomen or various other parts of the body. Here, undoubtedly, the explanation of mere reflex vascular changes of temporary character, is ample and sufficient, and I am far from denying their occurrence in the brain. I simply claim that they are practically never fatal, rarely even serious, and that they deserve to be called shock which they really constitute, not only in the clinical picture but in the treatment called for. When it comes to prognosis there is always much in favor of shock following head injury, since it is practically never followed with unpleasant or distressing sequelæ, such as mania, insanity, etc. In fact, so far as recovery is concerned, it is certain that any disturbed endocranium can be quickly restored to

normal just in proportion as absorption is called for instead of repair, i. e., cicatrization (C. M. Phelps).

I have taken you somewhat deeply into the field of pathology rather than along the lines of treatment, with which you are all But though diagnosis is mainly of value in proportion as it may lead to improved treatment, it must nevertheless be founded upon rational explanation and appreciation of the causes of disease. Accordingly, it seems necessary, in the interest of diagnosis and treatment alike, that the older views regarding concussion be done away with, that the condition be promptly recognized as one of shock and treated accordingly. So long in fact, as the case presents only signs and symptoms of shock, no distinct surgical nor mechanical treatment will be called for, save possibly infusion. But most important is it that recognition be prompt of symptoms of that shock which later and so often merges into one of compression, especially by means of those symptoms which permit of fairly accurate localization. Under these circumstances treatment which at first seems most simple and apparently trivial needs to be completely altered by substituting a formidable operation. Minute lesions. which give rise to mild forms of shock or contusion, are replaced by hemorrhages, which will give a serious clinical picture, often without opportunity for, or not capable of exact recognition, though the condition they produce may be serious or even fatal. Just so soon as a sufficient volume of blood escapes from any vessel or sinus, to make pressure over any of the areas of the brain whose function is known, there is immediate cause for prompt surgical interference; hence, the importance of ability on the part of the surgeon to localize such disturbances. fact, if this rule must be reduced to its simplest form, in teaching the elements of surgery to beginners, I should say that the most important lesson to be inculcated about injuries to the interior of the skull is when to operate and when to abstain. tiate, then, what I have already said let us put it in these words, that concussion pure and simple is an expression of shock calling for the conventional treatment of that condition. more serious and more fatal cases formerly called concussion, are really symptoms of contusion, whose symptoms are produced by multiple, minute lesions or ecchymoses, which may constitute a serious condition, and one often followed by cicatricial alterations that may cause more or less permanent perversion of function, but which admit ordinarily of no operative treatment. That finally, compression symptoms are always to be anxiously

watched for and so soon as recognized are to be regarded as indications for most prompt operative interference, unless the outlook even then is hopeless, because of the gravity of the injuries. Let us teach also that the extravasation, which at one hour is minute and but slowly extending, may increase until it causes distinct and recognizable compression, and that thus a case of contusion may be more or less rapidly merged into one of compression.

Let us remember also that compression symptoms are invariably the same, no matter what the exciting cause; that this latter may be a foreign body introduced from without, or a depression of the tables of the skull, in which case it acts instantly as such; that it may be a blood clot which may form during an interval of hours, or which may be produced within a few minutes, in which latter case it may probably prove promptly fatal; that compression of still later origin may be the result of cedema of the brain, while that coming after an interval of a few days, along with other indications, will make it usually easy to recognize the presence of pus, i. e., a traumatic infectious meningitis, which will be always fatal unless the meningeal cavity be opened freely and drained. Lastly, that compression may be produced at a still later date, sometimes years later, as the result of a brain abscess, whose exciting cause may, nevertheless, have been introduced at the time of the injury.

Pressure symptoms then, whether immediate or late, call always for operation, although the latter has sometimes to be abandoned because of the impossibility of localizing the exact compressing cause, or because of the condition of the patient, which may not permit of any added depressing measure. Of course what I have said refers rather to cases which are devoid, or nearly so, of external or surface markings or injuries. Even though compression be absent a depressed fracture should always be operated, even in the absence of all brain symptoms, so should in almost every instance a compound fracture without depression.

With these general hints regarding external injuries, having intentionally confined myself to lesions within the skull, I am quite willing to leave the subject in your hands for the further elucidation which I hope it may there receive.

### DETERMINATIONS OF AVAILABLE CHLORINE IN THE COMMERCIAL HYPOCHLORITES.

#### By S. H. WADHAMS, M.D.

In writing a paper on a subject of this kind figures necessarily play an important part. But in order to make a dry subject as interesting as possible tables and tabulated results will be omitted wherever consistent with the object in view. And the object in view, it may be stated at this point, is to show the medical fraternity in just what degree the hypochlorites can be depended upon as disinfectants.

Calcium and sodium form the bases for the commercial hypochlorites: calcium hypochlorite, commonly known as bleaching powder or chloride of lime, and sodium hypochlorite, known as Labarraque's solution. Bleaching powder as met with in commerce is a white, grey or yellow homogeneous powder having a characteristic odor. On exposure to air it gradually absorbs moisture and decomposes. As put up in packages for sale at our drug stores a certain process of deterioration is constantly going on. The hypochlorite is converted into the chlo ride, oxygen is given off, and we have an inert stable compound perfectly useless as far as disinfecting properties are concerned. Although bleaching powder has been extensively used for the past one hundred years the chemical formula is still uncertain. Considering Ca-a as the probable formula the process of deterioration is as follows:

#### 2 Ca OCl<sub>2</sub>=Ca OCl<sub>2</sub>+CaCl<sub>2</sub>+O.

It is evident that if this reaction goes on to any appreciable extent the efficacy of the compound is seriously impaired.

Sodium hypochlorite can be made from bleaching powder by adding to a solution of the latter sodium carbonate. Labarraque's solution is the pharmacopœial preparation of sodium hypochlorite and should contain 2.6 per cent of available chlorine. It is a cheap and powerful antiseptic,\* but has the disadvantage of containing considerable free alkali.

Recently a substance called electrozone has been put upon

<sup>\*</sup>For article on antiseptic properties of sodium hypochlorite, see *Lancet* of Nov. 28, 1896.

the market and extensively advertised as an antiseptic and disinfectant. Electrozone is similar to sodium hypochlorite, the principal difference being that electrozone contains no free sodium hydroxide and is therefore a more bland and unirritating preparation. The process of manufacture consists in passing an electric current through sea water. Beside the formation of sodium hypochlorite we have a small quantity of both potassium and magnesium hypochlorites formed. A determination of available chlorine was made in each of the preparations of electrozone, viz., the so-called disinfecting, dental and medical electrozone. The first yielded .44%, the second .34 1-2%, and the third .08% available chlorine. From these results we see that electrozone is a very weak preparation of sodium hypochlorite.

As to the efficiency of the hypochlorites as disinfectants there can be no doubt. Add to this the exceedingly low cost and we have an ideal disinfectant for certain purposes. Many physicians rely on the hypochlorites to disinfect typhoid stools, water closets, drains, etc. Sheets and bedding used by a patient sick with an infectious disease are soaked in a solution of the hypochlorite of lime. In fact, we use calcium hypochlorite wherever we want a cheap and efficient disinfectant. use as a disinfectant of typhoid stools the importance of having a good article, one which can be depended on, cannot be overesti-Imagine how rudely the fancied security of the physician is broken into when he finds the dejecta from his typhoid patient has infected the water supply of a community and he has a small epidemic of typhoid started, simply because the disinfectant did not do its work. That the available chlorine in the hypochlorite does fall below the pharmacopæial standard of 35% is a well-known fact. The object of the investigations which gave rise to this paper was to find out how much below standard the article was and if possible to place the blame.

The method of procedure was to purchase a small package of calcium hypochlorite at the different drug stores in five of the principal cities of the State. The available chlorine was then determined in each sample and a record made. Bunsen's method was used, which depends on the liberation of the available chlorine in the presence of potassium iodide by the addition of hydrochloric acid. The chlorine replaces the iodine of the potassium iodide and the iodine is held in solution by an excess of potassium iodide. To this solution is added a standardized solution of sodium thiosulphate until a colorless fluid results. By a simple mathematical calculation the per cent of chlorine is

then obtained. Determinations were made of samples representing nine different brands and below are given the results:

| Brand.                               |       |   |   |     | No. of Deter-<br>minations. |    | Lowest<br>Per Cent |   | HIGHEST<br>PER CENT. | AVERAGE<br>PER CENT. |
|--------------------------------------|-------|---|---|-----|-----------------------------|----|--------------------|---|----------------------|----------------------|
| Anchor, -                            | -     | - | - | •   | •                           | 5  | 19.52              |   | 35-77                | 27.81                |
| Red Riding                           | Hood  | , | - | -   |                             | 14 | 9.49               |   | 34.67                | 24. 12               |
| Crescent,                            | -     | - | - | -   | -                           | 11 | 17.15              |   | 27.37                | 20.80                |
| Risley, -                            | -     | - |   | -   | -                           | 5  | 14.49              |   | 24.45                | 19.68                |
| Red Cross,                           | -     | - | - | -   | -                           | 19 | 1.46               |   | 30.66                | 18.56                |
| Lion, -                              | -     | - | - | -   | -                           | 2  | 7.29               |   | 23.36                | 15.33                |
| Brookman's,                          | -     | - |   | -   | -                           | 3  | 10.22              |   | 16.79                | 13.99                |
| Star, -                              | •     | - | - | -   |                             | 5  | 3.28               |   | 34.31                | 12.00                |
| Acme, -                              | -     | - | - | -   | -                           | 9  | 9.12               |   | 13.87                | 11.96                |
| Average per cent available chlorine, |       |   |   |     |                             |    |                    | - |                      | 18.25                |
| Avera                                | ency, |   | - | - • | 16.75                       |    |                    |   |                      |                      |

From the results of the determination of available chlorine in calcium hypochlorite certain obvious conclusions are to be drawn. In the first place notice the wide deviation in the amount of available chlorine in the different samples. The lowest per cent was 1.43 while the highest was 35.77, and between these two figures are all possible variations. Evidently either the manufacturer or the druggist is responsible for this condition of affairs and a closer examination of the preceding table may teach us something.

First let us look at the "Acme Brand." Here we have a preparation put up in a very elaborate metal can, with a revolving top. This revolving cover is perforated with a series of holes which in a certain position cover corresponding holes in the second top of the can and through which the powder can be shaken. It is a very convenient arrangement for use, but the manufacturer might much better have expended his energy in putting a good article inside the can. We find these packages contained samples uniformly dry, white and finely granular—a perfect combination of physical properties, yet the analysis showed an average of only 11.96% available chlorine. Here we have a preparation packed in air-tight cans, yielding on analysis, only 10, 11 or 12 per cent available chlorine.

Contrasted with the "Acme Brand" is the "Anchor Brand," also packed in air-tight cans, but analysis of which shows very different results. In this case the samples were also white, dry and granular but yielded an average of 27.81% available chlorine—over twice as much as preceding brand, but still below standard.

The "Red Riding Hood Brand," with an average of 24% available chlorine comes next to the "Anchor Brand" in

the scale of excellence. This brand, unlike the two preceding, is packed in paste-board boxes lined with rosin. From the fact that the samples of this brand which were dry and granular, yielded a large amount of available chlorine it would be natural to infer that as originally packed it is up to standard. The danger of deterioration is of course much greater than as though it were packed in metal cans.

The "Crescent Brand" with 20% and the "Red Cross" with 18% follow the preceding brand. Both of these are put up in the same manner as the "Red Riding Hood Brand," but seemed to differ from that brand principally in the proportionately large number of samples which were wet or damp. It is impossible to say whether this difference is due to being put up in a more careless manner or to being kept in a damp place. That these packages are sometimes kept in damp, unfavorable places would be inferred from the results with the "Star Brand." This is an older brand and almost out of the market. Five samples only were obtained and of those four were damp or wet and sticky and averaged only 6.5% available chlorine, while the fifth was very dry and fine and yielded 34% available chlorine. On making special inquiry it was found that this package had been kept in a warm dry place since its purchase by the druggist. This would seem to indicate that at one time the packages all contained the required amount of available chlorine but had deteriorated to an almost worthless condition.

From these observations it seems safe to conclude that some manufacturers put out a chloride of lime which never contained the required amount of chlorine. That a certain deterioration goes on while the compound is in possession of the druggist cannot be denied. Just how extensive this process is depends of course on the conditions under which it is kept. Wherever the blame is, the fact remains that in seventy-five determinations the available chlorine averaged only a little over one-half of what it should. We would not think of accepting drugs from the pharmacist only fifty per cent pure, and why should we be satisfied with chloride of lime containing half as much available chlorine as it should? As long as chloride of lime is used as a disinfectant it is important that its work be well done. It is just as much the physician's duty to see that his patients have a good article as it is to see that it is properly used.

### THE THEORY AND PRACTICE OF SURGICAL DRESSINGS.\*

BY LEONARD WOOLSEY BACON, JR., M.D.

#### LECTURE III.

### PART I. V. SINUSES.

In the dressing of sinuses the natural history of the condition must always be borne in mind. A sinus may be formed in one of three ways: either by the burrowing of pus from a focus of secretion remote from the surface (as for example the sinuses seen on the hip and thigh in cases of hip-joint disease); or by the imperfect closing of a deep wound through the more rapid advancement of the lateral granulations than of those at the bottom of the wound; or, finally, in cases of dissecting phlegmon where the suppurative process has separated two anatomical layers normally in apposition, by the partial agglutination of these layers after subsidence of the suppuration, sinuses may remain as narrow tracts, as for instance along the bed of a seton or other drainage apparatus, pervious to wound secretions and to irrigating fluids for some time after the rest of the affected area has healed. The form of dressing should be varied to meet these three conditions.

I. Wick-drainage of the first form of sinus. In the first form of sinus any attempt to occlude the orifice or cause agglutination of the walls of the sinus until the secreting focus at the fundus has been dried up should be avoided; indeed, the very object of the dressing is by means of suitably disposed packing to favor the conservative function of the sinus as a vent. A slender wick of gauze, or better yet, a few strands of lamp-wicking, may be carried with a porte-mèche or forked probe as deeply as possible toward the fundus of the sinus, taking pains to carry the end of the wick clear to its destination by one thrust of the probe, and to avoid, on the withdrawal of the probe, catching it in the

<sup>\*</sup>Three lectures delivered before the pupils of the Training School of the Connecticut General Hospital at New Haven, Conn.

fibres of the wick so that the gauze or wicking may lie without kinks in a single straight strand along the wall of the sinus. The function of this strip of gauze is strictly and literally that of a wick and it should not fill the "lumen" of the sinus too full lest capillary action be interfered with. In case of a sinus of large calibre the wick should be in a single correspondingly thicker strand. This is better than to carry up by repeated thrusts of the probe successive portions of a more slender wick, which would necessarily be doubled on itself and collected in different parts of the sinus in bunches and balls much more likely to dam back secretions than to favor their rapid escape.

2. Method of dilating the orifice of a sinus. It is frequently advantageous and sometimes necessary to dilate the orifice of a sinus. This should never be attempted with gauze alone without the help of a drainage tube, for fear of corking up secretions in the sinus and so aggravating the original difficulty, but may be accomplished in this way: After the wick described above has been placed in position, a drainage tube of as large a size as can conveniently be introduced should be carried as deeply as possible into the sinus, taking pains not to push the wick into a bunch before it to overlie the orifice of the tube. Around about this drainage tube, though not reaching as deep as its inner end, gauze should then be packed as tightly and firmly as possible. Both the gauze stuffing and the drainage tube should project well beyond the cutaneous surface, as the skin is likely to be the most difficult tissue to dilate. Over all should be applied a copious absorbent dressing, dry or moist according to the exigencies of the case.

So much for the dressing of the form of sinus which has a discharging focus at its fundus. Very often no skill in dressing will bring such a sinus to heal until the knife and curette of the surgeon have destroyed the deep-seated focus of disease and opened up the sinus to be treated as an ordinary open wound.

3. Obliteration of the second and third forms of sinus by pressure. The general principle of treatment for the other two forms of sinus consists in local stimulation of the walls of the sinus and compression to maintain close apposition of its sides. This should not be applied, however, until we have assured ourselves that the fundus of the sinus is not the source of more secretion than can be readily be reabsorbed by the local lymphatics. Sinus formation in the closing of a deep wound can generally be avoided by skillful dressing, the secret being to withdraw the packing from the bottom of the wound sufficiently early, while

the wound orifice is still being freely and somewhat tightly packed. In like manner the proper dressing of a sinus of the second variety, a deep-wound sinus, will consist in inserting packing or a drainage tube nearly, but not quite, to the bottom of it, and after stimulating the walls and fundus of the sinus with balsams or ichthyol, or by the insufflation of some stimulating powder, in so applying pressure to the sides of the wound by compresses as to mechanically obliterate the part of the sinus beyond the packing. At each dressing such a sinus can be made more and more shallow by healing from the bottom, unless indeed there is a disease process in progress at the fundus which virtually counterindicates a closing of its vent.

The third form of sinus is generally superficial but though lying not far beneath the skin may be several inches in length. The dressing of a sinus remaining after a dissecting phlegmon calls for only a slight modification in the application of the same principles of pressure and local stimulation which were described in the preceding case. The application will vary, too, as such a sinus has one or two cutaneous orifices. Should there be but one cutaneous orifice pressure should be made by means of a narrow, firm, compress of gauze rolled into a cylinder of a diameter equal to the width of the sinus. A gauze roller-bandage, unrolled until of the right diameter, is convenient to use for this This should be laid directly over the end of the sinus most distant from the cutaneous orifice, as ascertained by probing or by injections, and should by pressure of bandages and dressings be made to obliterate an inch or two of this end of the sinus, while the end nearer the orifice may receive less pressure from the dressings or may even be drained and kept open by a gauze wick.

Should there be two cutaneous orifices to the sinus, such a compress as described should be applied midway between them, so as to divide the sinus by obliteration of its middle portion into two shorter ones. At each subsequent dressing the compress may be made longer until it overlies and presses upon the whole length of the sinus and so obliterates it by pressure from end to end.

In almost all cases where obliteration by pressure is sought for, local stimulation of the sinus walls is called for also. When compression is counterindicated on account of unchecked suppurative disease at the fundus of the sinus, local stimulation of the walls of the sinus is also counterindicated and for the same reason.

#### VI. BURNS AND ULCERS.

The intelligent dressing of ulcers demands first of all the ability to determine the natural tendency of a given ulcer whether toward spontaneous healing, on the one hand, or toward chronicity, phagedena or malignant degeneration, on the other.

Six points are to be observed in judging of an ulcer:

- 1. The base.
- 2. The margin.
- 3. The surrounding tissue.
- 4. The discharge.
- 5. The sensitiveness of the ulcer.
- 6. The readiness with which it bleeds and the color of the blood as it flows.

What appearances will these present in healthy ulcers tending to heal spontaneously?

- 1. The base of a healthy ulcer. The base of a healthy ulcer is (a) nearly or quite on a level with the surrounding skin. It is (b) covered with small, firm granulations, nearly of a size, from  $\frac{1}{16}$  of an inch in diameter, forming (c) an even bed upon which the epithelium pushing out from the margin may grow. These granulations are (d) of a bright, cherry-red color and are (e) moist and not with a glazed or varnished appearance. The base of a ulcer situated upon soft tissues should be (f) soft and yielding to the touch of the finger or the probe and not indurated like a chancre or an epithelioma, nor tough and springy like the felted fibrous base of a chronic ulcer, nor yet excessively tender and friable, like jelly, suggesting sarcoma or tuberculosis.
- 2. The margin of a healthy ulcer. The margin of a healthy ulcer is (a) even with the granulations of its base, that is, it is not undermined, nor does it form a tumefied ridge about the ulcer. It is (b) of a rose-red color, fading (c) at its external edge rapidly into the normal color of the surrounding skin. internal edge does not end abruptly (d) at the granulations, but gradually fades into a thin, pinkish, or pearly white, translucent film of new-formed epithelium, clinging (e) intimately to the deep-red granulations which it overlies. The outline of this internal edge will not ordinarily be regular or be exactly parallel to the general line of the margin but will (f) present small promontories corresponding to areas of more perfect bloodsupply over the course of new-formed arterioles, and indentations representing less active epithelium formation between these The margin of a healthy ulcer will (g) not be indurated, that is, will not be distinguishable as a circle of tissue

firmer than the base of the ulcer on one side of it or than the surrounding soft parts on the other.

- 3. The tissues surrounding a healthy ulcer. The tissues surrounding a healthy ulcer should have the negative characteristics of the normal tissues; that is, a healthy ulcer should remain a strictly local process in which the tissues beyond its margin should not participate to the extent of anything more than an almost imperceptible vascular dilatation to permit the increased blood supply necessary for the reparative process in the ulcer. The absence of contiguous involvement will be determined; (a) by the normal color of the surrounding integument, neither  $(\alpha)$ blanched by serous cedema, nor  $(\beta)$  cyanotic through venous stasis, nor  $(\nu)$  red and angry from either subcutaneous bacterial infection or superficial irritation from acridity of discharges; (b) by the normal state of the epithelial covering exhibiting neither  $(\alpha)$  the moist and sodden appearance of eczematous dermatitis, nor  $(\beta)$  the glossiness of dermal atrophy, nor  $(\gamma)$  any tendency to bleb-formation or  $(\delta)$  to scaling off of cornified portions in large flakes; (c) by the absence of tumefaction whether from œdema, inflammatory or passive, or from sanguine engorgement; (d) by the normal condition of the superficial vessels showing neither the marbleization of dilated veins nor the bright red, arborescent track of gorged superficial arterioles, (e) by the ready mobility of the skin upon the fascia beneath and (f) by the absence of local hyperæsthesia, anæsthesia or paræsthesia.
- 4. The discharge of a healthy ulcer. The discharge of a healthy ulcer consists of a small amount of laudable pus, that is of blood-serum containing leucocytes in greater or less abundance. When there is infection with the ordinary pus-germs the relative proportion of the cellular elements of the discharge, as well as the amount of the discharge will be increased, yet moderate and superficial infection does not particularly delay the healing of an ulcer especially when the excess of discharge is received into readily absorbent dressings. Certain it is that we frequently find the granulations of an ulcer bathed with a slight amount of pus yet find no other evidence of an unhealthy state of the ulcer.\*

<sup>\*</sup>Indeed, in the classical treatise on ulcers by one of the greatest of the older English surgeons, Benjamin Bell, a healthy ulcer is described as a "simple purulent sore," and a later eminent surgeon of New York was accustomed to speak of the laudable pus exuding from an otherwise healthy ulcer as "God Almighty's salve." An ulcer then which discharges a yellowish, thick, bland pus in moderate quantities, need not be relegated to the category of unhealthy

Pus free upon the surface of an ulcer should not be confounded with a coagulated exudate. The former can be easily wiped away and does not indicate a necessarily harmful infection of an ulcer; the latter adheres closely to underlying granulations or may lie closely upon tissues bare of granulations and prevent. healthy granulations from forming; it indicates an infection more deeply seated. The coagulation of fibrin is induced by the setting free of a fibrin-ferment. This ferment is contained in the bodies of the blood-corpuscles and is only liberated from them as these are destroyed. The appearance of a coagulum upon the surface of an ulcer indicates then an infection beneath the surface of the tissues which has caused thrombosis and destroyed the imprisoned blood-corpuscles, allowing the fibrin-ferment contained in their bodies to effect the coagulation of the fibrinogenous fluids in their immediate neighborhood. An ulcer, part of whose base is covered by adherent coagulum can hardly be considered to be in a strictly healthy condition, though small coagula will often loosen and disappear without special treatment.

The discharge of a healthy ulcer should then be (a) so scanty as to amount to little more than a moisture of the granulations; or if more abundant should be (b) frankly purulent; it should be (c) non-coagulating or at least non-adherent; it should be (d) without odor; it should be (e) without acridity and irritating effects upon the surrounding skin; when inspissated by desiccation it should form (f) crusts that may easily be washed away and detached from the margin of the ulcer without injuring the underlying epithelium.

5. The sensitiveness of a healthy ulcer, the readiness with which it

ulcers, and for this reason: Pus is harmful in proportion as it may invade the tissues and gain access to the circulation, and by becoming more and more charged with the products of bacterial life, the ptomaines, toxins and toxalbumins, either infect the general circulation, giving rise to a greater or less degree of septicæmia, or kill and dissolve the tissues with which it comes in contact, preventing the healing of a wound or ulcer when the constructive efforts of the body and the destructive effects of the pus germs are evenly balanced, or when the latter forces have the ascendancy, permitting the extension of ulcerative processes or leading to abscess formation. These are the well-known, dire effects of pus when confined. Pus upon an open surface as long as it retains the characteristics of laudable pus is far from being so vindictive a foe; it is a more or less harmless fluid maintaining the moisture favorable to the development of granulations, and possibly through the presence of non-virulent germs and of minute traces of their life-products, exercising a beneficially stimulant influence upon the healing process comparable to that of the balsams.

bleeds and the color of the escaping blood. A healthy ulcer is not exquisitely sensitive on the one hand nor obtuse and anæsthetic on the other. A healthy ulcer will bear without pain gentle washing with a soft mop or sponge as far as is necessary for the ordinary purposes of dressing.

A healthy ulcer likewise should not bleed at a slight touch of the mop or sponge, but should not fail to bleed if rubbed with them somewhat more vigorously.

Blood then escaping should be of a bright red approaching the scarlet of pure arterial blood. Dark purple blood following slight lacerations of the granulations indicates local venous stasis unfavorable to the rapid healing of an ulcer.

It is only when we have learned to differentiate them from unhealthy ulcers that we can well judge how to dress a simple healthy ulcer and how to vary our dressings intelligently to meet the variations from this type-form to which all other ulcers must in course of their progress be brought before they can heal.

The problem before us then is two-fold: How shall we dress a simple healthy ulcer? How may we convert an unhealthy ulcer whether sluggish, irritated, fungous or phagedenic into the type of ulcer we have described as healthy? This problem we may most conveniently treat under four heads:

- 1st. Simple recent ulcers and pressure sores.
- 2d. Specific ulcers.
- 3d. Chronic ulcers.
- 4th. Scalds and burns.

#### SEC. t. SIMPLE RECENT ULCERS.

### A. THE DRESSING OF HEALTHY ULCERS AND THE THREE CONDITIONS OF SPONTANEOUS HEALING.

Simple, recent ulcers, of small size, kept free from gross bacterial contamination tend to heal rapidly in individuals of sound general health. In such individuals an ulcer thus conditioned requires but the simple absorbent dressing described in a previous lecture for open wounds, aseptic or mildly infected.

Per contra, if any one of these three conditions is violated, the ulcer tends either to remain stationary, or to enlarge, or to degenerate into an ulcer complicated by involvement of adjacent tissues, or finally to undergo malignant degeneration, sarcomatous or epitheliomatous as the case may be. Let us now consider the treatment of simple recent ulcers where the three conditions of spontaneous healing (a) small size, (b) freedom from gross bacterial contamination, and (c) healthy constitution of the

patient are severally wanting, though it is much more common to find violation of two or more rather than of a single one of these conditions in actual practice.

B. SIMPLE RECENT ULCERS OF LARGE SIZE, FREE FROM GROSS BACTERIAL CONTAMINATION, OCCURRING IN INDIVIDUALS OF HEALTHY CONSTITUTION—WHY DO THEY NOT HEAL SPONTANEOUSLY?—WHAT MUST BE DONE TO BRING THEM TO HEAL?

The first question that arises is, what constitutes an ulcer of "large size"? This depends in part upon the situation of the ulcer, in part upon its shape and the relation of its long diameter to the course of the main fibres of the corium of the part on which the ulcer occurs, and in part only upon the number of square inches of ulcerated surface. An ulcer upon the leg three inches long and an inch wide would be unlikely to heal rapidly and spontaneously if it lay transversely across the leg. ulcer of the same dimensions with its long diameter parallel to the axis of the limb would probably heal readily if the other two conditions above-mentioned were not violated. In one case it would come under the present heading of ulcers of large size, in the other case it would not. An ulcer as large as a silver dollar on the abdominal wall might heal readily while a similar ulcer of the same size on the tip of the elbow would not. An ulcer as large as the whole hand will be difficult to heal in any situation.

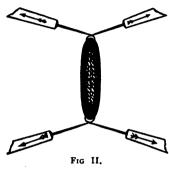
- 1. The first obstacle to the spontaneous healing of a large ulcer—traction upon its edges. There are two obstacles to the spontaneous healing of a large ulcer; of these the first is traction upon its edges continually tending to drag the edges away from the center. This tendency toward spontaneous extension of an ulcer occurs when the whole thickness of the skin is destroyed throughout an area so large that the contraction of the intact fibres beyond the margin of the ulcer tends to draw asunder, rather than to draw together the edges of the ulcer.
- 2. Illustration of the spontaneous contraction of small ulcers. Let me make this general law of the behavior of ulcers more plain by an illustration.

Suppose a circular ulcer as large as a dime situated upon the leg (Fig. I.). Consider this ulcer to have four poles at the extremities of two diameters, one parallel to, and the other across the axis of the leg. These poles we will call for convenience of description, north, toward the knee; south, toward the ankle; east and west, to right and left of the ulcer respectively. Now through



Fig. I.

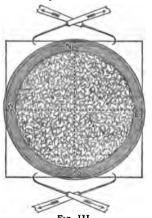
these poles circumscribe a square about this circular ulcer, and let the lines forming the sides of the square represent respectively the longitudinal and transverse fibres of the skin. We have then a diagrammatic representation of the forces tending to pull the edges of the ulcer together or apart.



If we now insert the point of a tenaculum at each corner of the square, and draw the tissues with the two tenacula on the eastern corners westward, and with the two tenacula on the western corners eastward, if the ulcer be small and recent we shall see (Fig. II.) the eastern and western poles of the circular ulcer approach each other, and the ulcer grow smaller or even be con-

verted into a linear sore, with decided relaxation at the north and south poles and but little traction at the east and west poles.

3. Illustration of the spontaneous expansion of large ulcers. The tendency of the fibres of the skin to contract and so mechanic-



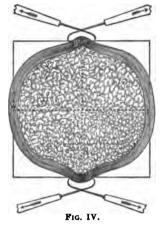
ally affect the size of an ulcer does not extend to an indefinite distance beyond its margin, moreover, of the different sets of fibres making up the meshes of the corium one set generally predominates markedly over the others; on the leg, for instance, the longitudinal fibres of the skin are much more powerful than the transverse. If, therefore, we now suppose, in the same situation, a circular ulcer having a diameter of say three inches (Fig. III.), with its poles, and circumscribed with a square as before, if we

were to insert our tenacula at the corners of the circumscribed square as before, we should probably have placed them beyond the zone of efficiently contracting fibres. In order then to have the experiment really parallel to the preceding we should insert our tenacula at points in the upper and lower sides of the circumscribed square, not more, say, than an inch to right and left of the north and of the south poles of the ulcer. If we now make traction as before we make no approach (Fig. IV.) toward obliterating the ulcer except in the immediate vicinity

of the north and south poles. The east and west poles do not approach each other at all, and whatever we may gain in the

vicinity of the north and south poles is at the expense of increased and injurious tension in the vicinity of the east and west poles.

4. The tardy reproduction of diametrical fibres in large ulcers and the inefficiency of these fibers when reproduced. If we could apply tenacula beyond the east and west poles and draw these directly together at the same time that the traction was maintained by the tenacula previously inserted, we should succeed in mechanically diminishing the size of the ulcer and in reducing the tension



upon the edges. But direct traction between opposite poles of an ulcer by spontaneous action of the skin-fibres is impossible from the fact that the diametric fibres in the bed of the ulcer have been destroyed by the very process which caused the ulcer, and the only efficient means of spontaneous contraction is the action of the intact fibres in and about the margin of the ulcer. These diametrical fibres across the base of the ulcer are indeed eventually reproduced through the fibrous metamorphosis of the connective tissue elements of the granulations. But this process is in the first place slow, and in the second place, it involves along with their reproduction another most serious obstacle to the healing of the ulcer, namely this, that the dense fibrous feltwork, which constitutes the cicatricial tissue under the base of such an ulcer, is most inimical to the ready development of the freely vascular granulations necessary to the life of the delicate epithelial film which we seek to have extend itself over the surface of the ulcer to effect its definitive healing. form of chronic ulcer is more obstinate or more intractable than one in which the granulations have undergone a premature fibrous metamorphosis, that is, where vascular granulation-tissue has undergone transformation into a firm and dense fibrous felt before, instead of after it has received an epithelial coating.

5. The second obstacle to the spontaneous healing of a large ulcer—the exhaustion of the proliferative power of the epithelium. Ulcers of very large size, independently of their situation are prone to remain indefinitely long unhealed from a second obstacle, namely, what has been explained as sheer exhaustion of the proliferative

power of the marginal epithelium. Whether this simple explanation is true or is a gratuitous assumption to account for the observed fact that large ulcers do not become readily cicatrized over, is difficult to determine. A more accurate statement of the matter seems to me, however, to be that the epithelium is unable to proliferate readily at more than a certain limited distance from an arteriole of a certain magnitude and that many things combine in a large ulcer to prevent the free flow of blood through vessels of adequate calibre to all parts of the ulcer and more particularly to its central portion. When by proper treatment we succeed in increasing the vascularity of the ulcer we may confidently expect a resumption of epithelial proliferation.

Let me call attention in this connection to the fibrous feltwork of cicatricial tissue referred to above as eventually covering the base of a large ulcer, and also point to tense retracted edges as presenting another obstacle to the healing of an ulcer besides that of mechanically increasing its area. Any tense tissue is necessarily anæmic. Now we look to have the epithelial film which is to cover the ulcer start from the margin of the healthy skin through propagation of the epithelial elements there present. In an ulcer with tense edges an anæmic condition of the tissues is maintained just at the point most vital for the advancement of the process of cicatrization.

6. The first step in the treatment of large ulcers—overcoming the mechanical disadvantage. We have at present under consideration simple recent ulcers of large size, free from gross bacterial contamination and occurring in individuals of healthy constitution and we have endeavored to answer the question why do they not heal spontaneously? We must now study what can be done to bring them to heal.

In the first place then we must by mechanical means overcome as far as possible the mechanical disadvantage to which such ulcers are always subject. We must seek then to relax the skin-fibres which are causing tension upon the edges of the ulcer. This may be done in two ways: First, by direct traction exerted upon the retracted margins by means of strips of adhesive plaster, or, indeed, in favorable cases by means of sutures; or, secondly, if the ulcer is situated upon an extremity, by placing the limb in a favorable position and then reducing the circumference of the whole limb, from the tip, up to and beyond the point of ulceration, by tight inelastic bandages over an elastic cushion of cotton or wool, or sometimes by the use of an elastic bandage or an elastic stocking or sleeve.

7. Strapping an ulcer. The operation of strapping an ulcer is simple. First determine in which direction the skin will yield most easily. Then trim three or four thicknesses of gauze to the exact shape and size of the ulcer and lay them over it to prevent the plaster from coming into immediate contact with the granulations. Then apply obliquely to the selected line of traction a strip of adhesive plaster, long enough to reach two thirds. of the way around the limb, so that the middle of the strap shall just cover the lower corner of the ulcer. Fasten one end of the strap firmly to the skin and make traction toward the ulcer, then with the hand press in toward the ulcer the portion of the skin on which the other end of the strap is to lie and apply the plaster firmly. Another strap is to be then applied in like manner nearly at right angles to this, then a third parallel to the first and a fourth parallel to the second, and so on until the ulcer is fully covered.

Strapping is adapted particularly to ulcers upon parts where the skin is freely movable and may be expected to be of use in any recent ulcer where the margins have not become anchored by inflammatory involvement of the surrounding tissues. I have found it of most use in ulcers of the leg and arm whose long diameter was parallel to the axis of the limb. In many cases where relaxation of the edges of an ulcer is most strongly indicated, the immobility of the skin will prevent the straps from being of much use. The plaster pulls away before the skin becomes loosened upon its bed.

8. Tight bandaging. Tight bandaging in the most powerful and the most universally applicable means at our disposal for promoting the healing of ulcers of all descriptions on the extremities, and its application must be thoroughly understood and its mode of action fully appreciated if we are to have success in treating this very common and often most intractable form of surgical disease.\* It is easily the first and most reliable of all

<sup>\*</sup>Though it is not my purpose to discuss the application of bandages, yet so much in the treatment of ulcers, and particularly ulcers of the leg, depends on proper bandaging that I feel called upon to say a word in regard to a very useful form of leg-bandage, never, so far as I know, described in text-books. It consists in a combination of the "spiral" and the "spiral-reversed" bandage of the books. After the foot and ankle have been covered in with any approved bandage, the roller should be guided up the calf of the leg and a reverse made as is customary in laying on the ordinary spiral-reversed bandage. The next turn of the bandage, however, should not be reversed but should be a simple spiral turn running as high up the calf as the natural unrolling of the bandage may bring it. Not until the head of the roller has twice traveled around the

means at our disposal for regulating the local blood-supply, and in a condition where the local blood-supply is so important a factor as in the treatment of ulcers, a judiciously applied bandage can be made to accomplish wonders. It is, however, no less potent for evil if ill applied, and a word of warning will not perhaps be amiss.

No bandage, if used for anything more than the purpose of retaining dressings, should surround, by circular or short spiral turns, that portion of a limb exclusively which corresponds to the shaft of the long bones; that is, is included between two successive joints. Nothing but harm can result from applying such a bandage with any approach to snugness. Far from helping an ulcer in such a region by relieving tension and improving its blood-supply, a snug bandage so applied causes cedema on both sides of it, and will, if long continued, even if not very tight, cause marked atrophy of the tissues beneath it, more especially marked in the skin. The circulation is seriously hindered in the cedematous zones above and below the bandage, and hindered in extreme cases to the point of absolute stasis in the zone covered by the bandage, with resultant thrombosis and even gangrene.

Pressure by bandaging cannot even for a comparatively short time, a week or two, be safely exerted upon the foot alone without having the bandage run some inches above the malleoli. If a tight bandage or even a moderately snug bandage is to be kept upon the foot longer than this, in order to avoid atrophic changes in the skin about the ankle, the bandage must be continued to the knee.

A pressure bandage on the leg, to be safe and at the same time effectual, must extend from the roots of the toes to the knee. If the lesion upon which we wish to bring the influence of the

circumference of the leg should a reverse be made to bring the fold down parallel to the first reversed fold, and so on, alternating between a reversed turn and a simple spiral turn until the swell of the calf has been reached, after which the bandage is completed by simple, short, spiral turns gradually merging into circular turns just below the knee. Should exceptionally heavy pressure be desired the best way to obtain it is not by drawing the turns of the bandage excessively tight, but by applying the usual bandage snugly and then laying on a second bandage right over the first. With the bandage just described even pressure can be made, if necessary, very firmly over the whole leg without danger of gangrene, for the reason that should the leg swell from any cause beneath the dressings, the loops which surround the leg being obliquely elliptical will gradually tend to assume a circular form and come to stand in a plane at a right angle, instead of at an oblique angle to the axis of the limb and the bandage, having thus a little leeway, will never circularly constrict the limb.

tight bandage to bear involves the lower third of the leg, the bandage should include the heel. If the lesion is confined to the upper two-thirds of the leg the heel may ordinarily be left exposed.

A pressure bandage to the knee requires bandaging of all the limb below if the patient is to be recumbent. If the patient is to walk about, it is not practicable to apply any considerable pressure with inelastic bandages. In ambulatory patients pressure by an elastic bandage or knee-cap may often be applied to the knee without bandaging the limb below, because the conformation of the joint is such that the main vessels are largely protected from direct pressure, and the circulation is furthermore assisted by the movements of the leg upon the thigh.

Similar principles should govern us in the application of pressure bandages to the upper extremity.

g. The second step in the treatment of large ulcers—the stimulation of epithelial proliferation. If by these mechanical means persistently and judiciously applied we succeed in overcoming the mechanical disadvantage which tends to prevent the healing of large ulcers, we may in our farther treatment of such cases employ the simple absorbent dressing before recommended, and confidently expect the ulcers to make uninterrupted though perhaps slow progress toward recovery, provided the proliferative power of the marginal epithelium do not become exhausted. lial proliferation, if slow, may be hastened by the application of silver nitrate, balsams or ichthyol, or by the use of stimulating dressing powders. When the marginal epithelium can no longer be stimulated to propagation, Reverdin's skin-grafts may give new centers of epithelial activity from which cicatrization of the whole surface may eventually be obtained, or it may seem wise or necessary to cover the whole ulcer by Thiersch's method of skin-transplantation.

Inasmuch, however, as interruption of epithelial proliferation in an otherwise healthy ulcer is one of the strongest indications we can have of its chronicity, the methods of counteracting this difficulty and of bringing such an ulcer to heal may better receive adequate discussion below, under the heading of chronic ulcers.

#### POSTURE DURING LABOR.

EVERETT J. McKnight, M.D., HARTFORD, CONN.

Believing that the benefits to be derived from an intelligent application of postural methods to the management of obstetrical cases are not fully appreciated by the majority of the profession, I shall endeavor in this paper to briefly call attention to some of the conditions in which the position of the patient can be made to accomplish results which otherwise would require the expenditure of an increased amount of time and labor on the part of the attendant, and what is of vastly more importance, would entail a greater amount of suffering upon the patient.

Dr. A. F. A. King, of Washington, D. C., has said (Am. Journ. Obst., July 22, 1889, page 338): "I am convinced that thousands of our parturient women at the present time are made to suffer hours and hours of miserable agony during labor which might be prevented, or at least materially abridged, by suitable changes of posture, without any additional danger or detriment to them or their offspring."

Much has been written in regard to the best position to be taken by the parturient woman, and some able articles have appeared. Probably the most exhaustive investigations have been conducted by Dr. Geo. J. Engleman of St. Louis, who studied his subject in the following manner:

"First, with reference to the position occupied by women in labor among nations of the past, especially those of the highest and best civilization.

"Second, with reference to the position in labor among the savage races at the present day.

"Third, with reference to the movements of women and the position they involuntarily assume in the agonies of the last throes of labor, when, to the exclusion of every other feeling, they are controlled largely by instinct."

Dr. Engelman's conclusions were:

I. "In the ordinary labor case, which is a purely mechanical process, the patient should be given greater liberty and should

be permitted to follow the dictates of her instinct in regard to her movements, more freely than is now customary.

II. "In the earlier stages of labor the parturient must be guided in her actions and in the position assumed by her own comfort and by the dictates of her instinct.

III. "The care with which the parturient women of uncivilized people avoid the dorsal decubitus, the modern obstetric position, at the termination of labor, is sufficient evidence that it is a most undesirable position for ordinary cases of confinement, and I am convinced that the thinking obstetrician will soon confirm the statement not unfrequently made by the ignorant but observing savage, by negro and Indian, that the recumbent position retards the labor and is inimical to easy, safe and rapid delivery.

IV. "In ordinary labor cases the expulsion of the child should be expected in an inclined position; kneeling, squatting or recumbent in bed, on the chair or lap, as is done by the great majority of uncivilized people.

V. "Of these positions the semi-recumbent is the most serviceable, and should be adopted as the obstetric position in all ordinary labor cases; it is preferable to the kneeling or squatting."

These conclusions probably represent pretty accurately the teaching of the present day, except that most writers prefer the recumbent position or that upon the left side, as being more convenient for the attendant and more acceptable to the patient. While Dr. Engelman's results may have been obtained after careful and painstaking investigation and may have been logical conclusions drawn from the data at his disposal, I do not consider them as safe rules to be followed blindly in all cases.

In the discussion which followed the reading of this paper Dr. Fordyce Barker raised the question whether science was not ahead of instinct in preparing a woman to go successfully through her labor.

It is my belief that it is not advisable in every case to allow the patient to choose her own position, for it has been my experience that she will as a rule instinctively take that position which affords her the greatest amount of ease and comfort, and that that position is not always the one best calculated to facilitate her labor. It is the duty of the obstetrician to see that the presenting part engages in the best possible position for a speedy and safe delivery. That much can be done by postural methods towards rectifying faulty presentations and maintaining normal ones in their proper relations is an established fact, and I shall now endeavor to call your attention to some conditions where this can be accomplished.

In presentations of the head, it is of primary importance that the vertex be the presenting part and that it remain as such throughout the entire labor. I have repeatedly verified the fact that a change of position from one side to the other would often cause an appreciable change in the presenting part. In left occipital cases, for example, it is possible, especially if the abdominal wall be very lax, for the fundus to be so far deflected to the right as to materially interfere with the relations at the other pole of the fetal ovoid. The head being already in complete flexion, it follows that the forehead would be brought down and that the occiput would recede. So it is evident that a patient in labor with a left occipital position should remain upon her left side until the head has fully engaged, especially if there is any tendency for the occiput to recede. In right occipital positions the reverse is true and such cases progress more safely and rapidly when maintaining the position upon the right side.

We can then formulate a rule that until the head has fully engaged the woman should lie upon that side towards which that part of the head is directed which it is desirable should lead the descent. When a physician finds it necessary to leave a case for a time and considers it safe to do so, it is his duty to give explicit instructions as to the position which his patient shall maintain during his absence. In this way he may be able to prevent the feeling of annoyance and chagrin which has come to many who, everything having appeared to be progressing normally, have awakened from a much needed sleep or have returned after a short absence, to find a brow or face presenting.

An exception to the rule just laid down must be made in those cases of occipito-posterior positions which may be seen so early that it is possible to bring about rotation of the occiput anteriorly before the head has engaged by placing the patient in the knee-chest position.

Allow me to quote from the "American Text-book of Obstetrics," page 449: "If the patient is placed in the knee-chest position the anterior wall and the fundus are the lowest portions of the uterus. So long as the patient remains in this position there is a tendency for the child to sag away from the brim under the influence of gravity, and since the recession of the head from the brim leaves the child free to turn upon its own axis, while the presence of the spinal column makes the dorsal

side the heavier, there is also a tendency toward a rotation of the fetus as a whole until its dorsum is in apposition to the anterior wall of the uterus."

It would be well if such cases could adopt this position at intervals for several days prior to their delivery.

Sometimes on account of an excessive anterior or lumbar curvature of the spine, the head will not engage on account of the angle made by the axis of the child and the axis of the superior strait. In these cases the head is forced against the posterior border of the pubis and all efforts at expulsion are for the time being futile. If left alone they sometimes change into transverse positions, the head being forced to one side until it rests in the iliac fossa, or when the occiput is anterior, this point may become fixed against the symphisis and the other end of the fetal head driven down until the face presents.

It is in these cases that posture gives most brilliant results. It has been demonstrated \* that when the woman stands erect, the axes of the pregnant uterus and the axis of the superior strait generally coincide, but in the supine position that the fundus generally fell back, giving an average angle between the axes of about nineteen degrees. This being the case, it is apparent that in the knee-chest position the fundus would fall still further forward. So in the class of cases now under consideration where the angle between the axes is abnormally large, they can be made to more nearly coincide by placing the woman in the knee-chest position; the fundus falling forward, the head is allowed to engage and the forces being applied in the right direction, everything else being normal, the labor will progress favorably. Of course this position is to be maintained only so long as is necessary to secure complete engagement of the head. In looking back over a somewhat extensive obstetrical practice I can recall nothing which has given me greater service and satisfaction than a knowledge of what can be accomplished by this same knee-chest position.

Dr. A. F. A. King of Washington, D. C., has written several valuable articles upon the advantages of a squatting position, applying it in the management of a number of faulty positions and conditions. His results are supposed to be obtained by thigh pressure upon the sides of the abdomen, in transverse positions pressing upon the poles of the fetal ovoid in such a manner as to bring its long axis in coincidence with the axis of the pelvic

<sup>\*</sup>Am. Journ. Obst., Vol. XIX, page 583.

canal, and in other cases forcing the whole or one side of the lower segment of the uterus farther backwards and away from the pelvic walls.

While I would not underrate the advantages of this position I believe that more can be accomplished by the knee-chest position. Certainly the same amount of thigh-pressure can be exerted and, in addition, there is the effect of gravity in causing a recedence of fetal parts from the pelvic walls thus allowing more freedom of motion. The knee-chest position is also not so repugnant to the woman and is much more convenient for the attendant. It is possible by this means to sometimes disengage and rectify faulty positions and I have several times applied forceps in this position with good results. In those very common cases where the anterior lip of the uterus is caught between the head and pubic bones, relief can almost invariably be obtained by placing the woman in this position and pushing up the lip during the interval between the pains. In some cases, where only a small amount of liquor amnii is in advance of the head and there is in consequence not so great dilating power, this can often be increased by placing the woman in the knee-chest position when the head will recede and the next pain will force down a larger amount of liquid. In cases where the physician is in doubt as to the exact presentation a much more thorough and satisfactory examination can be made than in any other position; as the head tends to recede from the pelvic brim a much larger surface can be brought within reach of the examining finger.

Enough has been said to show that it is not advisable for the woman to be allowed in all cases to follow her own inclination in selecting a position for her delivery, and I believe it is equally apparent that no one position can be made to apply to all cases. While I am willing to acknowledge that the semi-recumbent position has many arguments in its favor still I believe it very bad practice to keep a woman long in any one position unless it be for the prevention or relief of some abnormality. Anyone who has had any extensive experience in obstetric work has seen many illustrations of the advantages of changes of position in protracted labor. The pelvic canal contains so many ridges and prominences against which the fetal head may be delayed that it is not to be wondered at that a slight change of position may sometimes, by permitting the forces to be applied to better advantage, break up an impaction and aid in the progress of the labor. So I would agree with Dr. King in saying that "oneness. of posture was the worst of all."

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THE characteristics of woman eminently qualify her as a Her solicitude, tact and sympathy-elements of the maternal instinct—are exercised in the sick room with soothing and salutary effect. When to these innate traits is added a hospital training she becomes an invaluable ally to the medical profession, and merits discrimination from her associates, not so trained. In rural communities the female dispenser of herbalsimples has long retained much confidence and esteem among the uninformed. Her armamentarium consisted of herbs, traditional methods of procedure, and the confidence of the patient. With these she often produced results detrimental to the practice of the neighboring physician, and was therefore ranked as no mean competitor. The trained nurse, less independent than her prototype of the village, is a subordinate, but one of high She is indispensable to the profession and, if able and scrupulous, wins alike the gratitude and commendation of physician and patient.

There is as much need of the public recognition of the difference between faithful and unfaithful nurses as between honorable physicians and quacks. Is there not sufficient esprit de corps among trained nurses to unite in association for mutual benefit? If the conditions required for membership in such an association were known it would be of great value to physicians and nurses.

Such an association would tend also, by its numbers, to bring into prominence a calling which is incomparably the noblest among women.

\* \_ \*

EARLY in the history of bacteriology as a science the microscope and laboratory became important factors in the world of medicine, but with the rapid and stupendous growth of that study, these have become gradually indispensable to the proper study of disease. With this increase in importance has grown up the actual need to successful medical practice of a laboratory and its equipments, immediate and ready access to which would be at all times possible. Clinical diagnosis will always maintain an important place in the hands of the physicians, but it has not the advantage of certainty which the microscope affords. Again the bright era of usefulness which the X rays open to the surgeon has given to the laboratory another useful adjunct.

Apropos of this, the recent action of the Hartford City Medical Society in using funds at its disposal for the erection of a memorial building to be used as a club house, library and laboratory, is certainly a movement for which the society is to be commended. The idea is a comparatively new one to be taken up in this way, and though the laboratory may not be so important a feature at first, we predict that as time goes on it will become the most valuable part of the building's equipment. facilities for a public laboratory have heretofore only been possible in the large cities, where the public board of health could provide the necessary equipment; but that medical societies should take up the matter themselves, maintaining a central building for the use of all their members, where the expense will be reduced to a minimum, is certainly a plan to be recommended to medical societies generally. This is a reasonable solution of the laboratory problem.

\* \* \*

In the study of a profession one becomes accustomed to depend upon collateral reading for much information. For this reason a well-stocked library is an especially useful adjunct to a professional school's equipment. It is in this respect that our Medical School is lacking. To be sure there is the University Library which contains over two hundred thousand volumes, some few of which are devoted to medical subjects, but this has been found to pay but poor dividends to students who have invested their time in looking there for up-to-date works on medicine.

Since the JOURNAL was established two years ago there have accumulated in its possession over a hundred volumes—recent standard works on medicine and allied sciences. If the use of this small collection can be taken as a criterion surely a complete library would be one of the most advantageous additions to the material plant of the school.

When we see that both of the other professional schools of the University have individual libraries of their own we are apt to feel the more keenly our own poverty in this respect.

The JOURNAL hopes in time to build up a medical library for the school. It has already by its little nucleus, shown the need of one and taught its use. It will need the aid of both alumni and students, however, to realize the full fruition of its efforts.

On the Editorial Board in this issue we note the change of E. D. Chipman to succeed J. B. Griggs, resigned, and the addition . of H. G. Watson as associate.

#### A BIT FROM THE HISTORY OF ANÆSTHESIA.

HENRY P. STEARNS, M.D., HARTFORD, CONN.\*

Gentlemen: Before commencing my lecture I desire to tell you a story—not by any means a new one, though probably no one of you has ever heard it.

On the evening of December 10th, 1844, Mr. G. Q. Colton, who, I think, at present resides in Brooklyn, N. Y., gave in Union Hall, Hartford, an exhibition of the effects of nitrous oxide gas on persons inhaling it. Such exhibitions at that time were not uncommon. Mr. S. A. Cooley, a well-known citizen of Hartford, was one of those who inhaled the gas. After coming under its influence to some extent he became excited, jumped off the platform, and climbed in a very awkward manner over the benches in the hall. After he regained consciousness he returned to the platform. Dr. Horace Wells, a practicing dentist of Hartford, remarked to him that he must have injured

<sup>\*</sup>Dr. Stearns very kindly acceded to our request that he should note down this bit of the beginnings of the history of anæsthesia. It was an interpolation into a recent lecture by him. Having had such intimate and accurate knowledge of the matter his resumé is more than ordinarily valuable to physician as well as student.—Eds.

his legs badly in his excursion over the benches, but Mr. Cooley declared that he did not, and to prove that he did not, pulled up his trousers, when it was perceived that his legs were covered with blood. Mr. Cooley remarked that it was very singular, as he had not experienced any pain. Dr. Wells, after taking his seat beside Mr. David Clark, said to him that if one could go through such an experience without suffering he believed that any one under the effects of the gas could have a tooth pulled without pain. Dr. Wells afterward made the same statement to Dr. Riggs, who was present, and had an office adjoining his own, adding that probably a larger quantity of gas would be required. The result was an agreement to try it. The difficulty of getting any one to take the gas for such a purpose was then discussed, and Dr. Wells, finally said that as he had a decayed molar tooth, he would himself take the gas if Dr. Riggs would extract the tooth. The next morning Dr. Wells requested Mr. Colton to come to his office and place him under the influence of the gas. He did so and Dr. Riggs extracted the tooth without causing any pain. Dr. Wells, greatly elated with his grand discovery, immediately began to use gas in the extraction of teeth, and made a perfect success in thirteen cases.

Such was the discovery and demonstration of modern anæsthesia; that is, the discovery of the wonderful fact that the human system can be rendered insensible to pain by inhaling nitrous oxide gas. This fact had never before been known or Fifty years before, Sir Humphrey Davy had demonstrated. suggested that possibly it might be true, and if he had converted his suggestion into a certainty by some minor surgical operation, such as the opening of an abscess, or the extracting of a tooth, can we doubt that he would have been regarded as the discoverer of anæsthesia? But so far as is known he never tried to demonstrate it, and it is certain that Wells had never known of Davy's suggestion. It was an absolutely new discovery by Wells, and as such ranks with those made by the most renowned discoverers in history. But Dr. Wells not only made and demonstrated his discovery, but he went to Boston to make it public. He there visited Dr. Morton, who had formerly been a student in his office in Hartford, and told him of his discovery. After a few days he gave a demonstration by pulling a tooth, but as the boy made some noise the audience, composed of students, hissed and ridiculed him. He then returned to Hartford, and both he and Dr. Riggs continued to use the gas in the extraction of teeth. About a year afterwards Dr. Wells went to Europe to

make his discovery known there, and received the honorary degree of M.D. from the French Academy.

Dr. Wells' discovery occurred nearly two years before Dr. Morton, who merely followed Dr. Wells' practice of anæsthesia, pulled the tooth of Eben Frost in Boston. The honor of this great discovery has been awarded to Dr. Wells by the American Medical Association, the New York Medical Society, the Connecticut Medical Society, and others in this country, and also by Sir James Y. Simpson of Edinburgh, who first demonstrated the anæsthetic properties of chloroform. And yet I notice that at the recent celebration of the fiftieth anniversary of surgical anæsthesia held at Boston, no mention was made of Dr. Wells' part in this great discovery. Comment on such injustice to the memory of one of the greatest benefactors of mankind is unnecessary.

## **OBITUARY.**

Dr. Leonard J. Sanford, for some years professor of Anatomy in the Medical Department of Yale University, died at his residence, No. 216 Crown street, New Haven, on the morning of December 12th, 1896, at 5 A. M., after a short illness.

Dr. Sanford was born in this city on November 8th, 1833, was educated in New Haven at the Medical Department of Yale, being a member of the School at the same time with Prof. C. A. Lindsley, Dr. Francis Bacon, Dr. Melancthon Storrs, Dr. Eli Ives and Dr. Chas. Ives, but completing his medical course at Jefferson Medical College, Philadelphia, where he took the degree of M.D. in March, 1854. Returning to New Haven he was appointed Professor of Anatomy and Physiology (then one chair) in 1863. This he held until the chair was divided in 1879, when he became Professor of Anatomy, a position which he retained until his retirement in 1888. During this time he was also Lecturer upon Hygiene and Physiology in the Academic Department.

Dr. Sanford was a member of the American Academy of Medicine, the American Medical Association, the American Public Health Association, the Connecticut Medical Association, and the New Haven County and City Medical Associations. During his early years he was visiting physician to the State Hospital of New Haven. He gained considerable renown as a writer, among his best-known contributions to medical literature, being "Plastic Constituents of the Blood" and "History and

Anatomy of the Gorilla with Comparative Reference to the Anthropoid Apes as a Class." He received from Yale the honorary degree of M.A. in 1858.

In April, 1866, Dr. Sanford married Miss Anna M. Cutler, whose death preceded her husband's some three years. Three children survive him, two daughters and Dr. Leonard C. Sanford of this city.

For forty-five years Dr. Sanford had been a member, and for thirty-four years a deacon, in the Center (Congregational) Church of New Haven. His pastor, Rev. Dr. Smyth, says that Dr. Sanford had been the staff upon which he had leaned. Dr. Smyth continues as follows: "Dr. Sanford's success as a physician was a part of his success as a man-he had lived in the community the life of a true, genuine, loving, blameless man. He had loved his profession because to him it was the best profession in which to live to do good. His religious trust was firm and sure, while it was marked always by large, sunny openmindedness. When he rallied somewhat in his last illness he thought of living in order that he might do something more for others. When his life seemed ebbing his thought of death was bright and joyous. His death was like his life, calm, rational, devout, unselfish, joyous and full of peace. He possessed the too rare virtue of loving to see others succeed in his own work; and the large attendance of physicians at the funeral service showed how widely Dr. Sanford had endeared himself to the medical fraternity. Few, if any, men in New Haven will be more missed; he has honored his profession by following in it through many years of service the example of his Master, the 'Ideal Man,' of whom, as he told his pastor, he was thinking when he fell asleep on what the doctors had led him to suppose might be his last night here."

# HOSPITAL AND CLINIC NOTES, ETC.

PLACENTA PRÆVIA.—On November 13th I received a call to visit Mrs. B. On inquiry I learned the following: Age 34, mother of four children, three living; confinements precipitous and deliveries not difficult; general health, during pregnancies, poor; last child born nine months before, died when five months old; for the last three weeks had been greatly depressed with morning sickness and an aching in sacral region, painful vesical

tenesmus; menstrual flow had begun in early morning and seemed natural but the backache was enhanced and abdominal pain severe. Inspection showed abdominal distention, and percussion tympanites. Five hours later I found the patient resting comfortably under the influence of anodynes. For the next five months menstruation was normal while every evidence of pregnancy persisted and normally developed. All went well until April 12th, the general health of the patient improving, the urine free from albumin, normal in quantity but specific gravity a little high, from 1026 to 1030. The stools regularly and easily evacuated. April 12th I was called by Mr. B., who said his wife was "in pain and flowing a great deal." I went with all haste and found my patient well-nigh exsanguinated in the twenty minutes which had elapsed since the flow began. Eight thicknesses of a heavy comfortable were thoroughly saturated and upon the uppermost layer was a huge clot. As quickly as possible I packed the vagina with tampons made aseptic in a saturated solution of phenic acid, and sent for Dr. R. A. McDonnell. After a hurried consultation it was decided to attempt delivery at once in view of the fact that the patient's strength was failing and the radial pulse was imperceptible. Quickly removing the tampons, on introducing my right hand into the vagina I found a boggy mass obstructing the internal os which was at once recognizable as the placenta; the os being sufficiently dilated but little difficulty was experienced in detaching the adherent portions of the placenta and extracting it entire. No hæmorrhage followed. Another examination found a right occipito-posterior presentation. The uterine contractions were very feeble and recurring cyanosis was only relieved by constant exhibition of Spts. Fru. hyperdermically. I applied forceps and delivered a dead seven months' fœtus. The patient swallowed ext. Ergota fld. 1 drachm, and shortly after the uterus contracted. The recovery was rapid.

GEO. H. JACKSON, M.D.

HYDROCEPHALIC CHILD.—A hydrocephalic child, born about a year ago at the New Haven Hospital, died recently in this city. The child's mother, a sufferer from Bright's Disease, died shortly after giving it birth. At that time the child seemed in every way normal but after a little its head gradually took on a hydrocephalic appearance, enlarging in all diameters. The head was tapped at three different times, and each time a pint of serous fluid was removed. After each removal of fluid the child

appeared to be more comfortable, but in spite of these measures it steadily failed and after a year's existence died. The examination of the head after death showed a skull cavity very much enlarged, the walls of which yielded readily to pressure. The skin of the head was covered with an exuberant growth of hair. The greatest possible antero-posterior semi-circumference was 18 1-2 inches while the circumference from one external meatus to the other, measured over the vertex, was 29 inches. The weight of the head, and it had shrunken some, was 24 pounds. Cures have been reported from the method of tapping but in this case it proved of no avail. No autopsy was allowed except the examination of the head.

W. S. B.

PRINCESS PAULINA. - Little Paulina Musters, of theatrical fame, generally called Princess Paulina, was born on the 26th . day of February, 1876, at Ossenrecht, Holland. She was the seventh child of a family of twelve. Her father and mother, still living, are a robust couple, rather above the average height as are also her six sisters and two brothers, all of whom are still living. On the day of her birth she was said to have measured twelve inches, at eighteen years nineteen inches. Her weight in normal health was from seven and one-half to nine pounds, and, though diminutive in size, she gave all the characteristics of a fully-developed woman. The breasts were round and prominent, and the pubes and mons veneris covered with hair. She began to menstruate at the age of sixteen, and from that time on had menstruated regularly every twenty-eight days, her menstrual period lasting three days, the flow being normal in color and quantity. The illness for which I was called to attend her had taken its origin from a simple cold which she had contracted during one of her theatrical exhibitions. Her cold developed into bronchitis, the bronchitis into pneumonia, which subsequently was complicated with meningitis, and after a ten days' illness the little woman died. The chief difficulty I encountered at first was regarding the dosage of medicines which I should administer. It is true that though a fully-developed woman she was bodily of the stature of an infant. I at first prescribed mixtures which were customarily administered to children in these diseases, but I subsequently had to increase them in strength to the adult dose because that was the only way in which I could receive the full benefit of the drug. She might eventually have recovered had it not been for her heart which had become considerably weakened from previous alcoholic excesses, for it was astonishing to see what quantities this midget could absorb. After death I took measurements of her body and found the following, although after prolonged illness and death her body had become considerably elongated: Length of her body, 24 inches; length of arm to tip of fingers, 12 inches; length of leg from hip to tip of toe, 12 inches; circumference of head, 16 inches; length from chin to forehead, 5 1-2 inches; length from chin to ear, 3 1-2 inches; circumference of chest across the breasts, 18 1-2 inches; higher up, under the axilla, 19 inches; circumference of abdomen, 19 inches; around the hips, 18 inches; across the waist, 17 inches; length of foot, 4 inches; length of hand, 3 1-2 inches; from shoulder to shoulder in front, 7 1-2 inches; circumference of thigh, 7 inches; of knee, 6 inches; of calf, 4 1-2 inches.

I. DARWIN NAGEL, M.D.

[These facts have appeared in somewhat different form in *Pediatrics*.—Eds.]

Foreign Body in Bronchus.—A boy six years of age at Sag Harbor, L. I., while playing with feed corn on July 29, 1896, allowed a kernel to slip down his trachea; was diagnosed as lodging in the right bronchus. From that time on the boy lost appetite, grew thin, and suffered considerable dyspnœa. After three weeks the symptoms grew decidedly worse, and so serious did his condition seem that consultations were held to consider the removal of the kernel by operation, as that seemed to be the only means of saving the boy's life. But the idea of surgical interference was finally given up as presenting too great danger. This condition of affairs continued until the 22d of September, when the lad in a paroxysm of coughing seemed about to strangle. His father, who was near, struck him sharply across the back. Relief came immediately and such easy respiration as he had not known since July 29th. In about four hours the kernel of corn was passed The paroxysm of coughing alluded to was no doubt an effort to throw the kernel out between the vocal cords. From former similar experiences it was believed that the corn in this instance instead of dropping back into its former location stuck between the cords, from which it was dislodged and thrown into the œsophagus by the blows of the father.

### MEDICAL SOCIETY REPORTS.

FAIRFIELD COUNTY MEDICAL ASSOCIATION.—The semi-annual meeting of this Association was held at the rooms of the Hobbie Post, G. A. R., Stamford, October 13th, 1896, by invitation of the Stamford Medical Society. The meeting was called to order by President J. W. Wright. Dr. Donaldson was appointed clerk pro tem. The minutes of the annual meeting were read.

Dr. W. H. Donaldson then read a paper entitled "The Physician and the State," speaking of the duties which the physician performed for the State and more especially those of the Town Health Officer. The paper was discussed at length by Drs. Barber, Watson, Rogers, Schavoir, Pierson, Wright and others.

The motion to hold a two-days' session at the annual meeting was lost.

The following gentlemen were elected to membership: Joseph Birkbeck Burroughs, M.D., Bridgeport, Syracuse Medical College '81; Robert E. Purdue, M.D., Southport, Sterling Medical College, Ohio; Frederick J. Adams, M.D., Bridgeport, University of New York '95; Albert Lewis House, M.D., Nichols, Yale '95.

Dr. Wordin spoke of the amendments to the Medical Practice Act, and said that under the present law it was almost impossible to get a conviction, especially in Meriden. It was voted that we endorse the action of the State Society in support of the amendments, and urge our representatives to work for the same.

The Association then took a recess for dinner at the Atlantic Café, where they were handsomely entertained as guests of the Stamford Society. After the dinner the Association was invited to the office of Dr. Schavoir, who had an interesting and instructive paper on "Electricity as Applied to Medicine, with Illustrations." The Doctor gave the members a fine exhibition of the Roentgen Rays. Thirty-five members present.

L. T. DAY, Clerk.

New Haven City Medical Association.—The regular monthly meeting of this society was held Wednesday evening, December 2d, at the house of Dr. Alling. President Mailhouse presided. As the Secretary, Dr. Townsend, was late, Dr. R. A. McDonnell was called upon to act as Secretary pro tem.

The following case was related by Dr. Lamb. A lady called to consult him about her son. On account of his condition she desired castration. The patient was twenty-nine years of age, had been insane for ten years. For the past year he masturbated almost continually and became very filthy in his habits and far advanced in a state of imbecility. After an examination Dr. Lamb decided not to act without consultation, and Dr. Carmalt's advice was sought. A history of such cases showed that relief might be expected from operation, and castration was determined upon. Dr. Lamb performed the operation but the case was too recent to state fully the results. The patient was still imbecile and as yet there was only a slight decrease in masturbation, but he confidently expected a greater decline; that the patient's physical and mental condition had improved.

Dr. Arnold believed the result of castration doubtful. "In India eunuchs have the penis cut flush with the body."

President Mailhouse believed that masturbation brought on the imbecility.

Dr. Swain showed a tooth which he had removed from a child's ear, having been put there during its play and lain embedded for a considerable time. A second case reported by Dr. Swain bore a similarity to the first. He had found in an ear, and succeeded in taking out, an apple seed and some pieces of eroded bone. Dr. Swain showed these foreign bodies to the society.

Dr. Alling then exhibited a style he had removed from a lachrymal duct wherein it had remained for some years.

The discussion of the evening was opened by a paper by Dr. C. A. Tuttle on "Some Simple Facts in Pott's Disease." The paper was illustrated by several excellent explanatory charts.\*

The society passed a vote of thanks to Dr. Tuttle for his paper which showed at once careful study and preparation.

Dr. Arnold opened the discussion of the paper stating that he found absolute immobilization the most efficient treatment in this disease. Dr Fleischner in his remarks agreed with Dr. Arnold's ideas of absolute fixation. The meeting then adjourned for refreshments.

#### ITEMS OF INTEREST.

The first medical school in America was established in the City of Mexico; the first printing press on the Western Continent was set up in the same city.

<sup>\*</sup>This paper is to appear later in the JOURNAL.

The Louisiana State Board of Health has announced that it will supply antitoxine free of charge to poor diptheritic patients.

A series of fetes have been celebrated at Alais, in the center of the great mulberry and silk-worm district in France, in commemoration of the services rendered by Pasteur to sericulture. The silk industry covers an enormous area, and its extension is owing to the studies conducted by Pasteur at Alais in 1865 (and the following years) into the diseases of silk worms and the method of eliminating them. The fetes lasted from September 25th to 28th.

The Pasteur Monument Committee of the United States, E. A. DeSchweinitz, Secretary, have sent out announcements reminding scientific men of the debt the civilized world owes to M. Pasteur and urges the people of this country to "assist in this tribute of appreciation and love" at this timely opportunity. The most modest subscriptions are welcome. They should be sent to the Secretary of the Committee, Cosmos Club, Washington, D. C.

Yellow fever has appeared at the New York quarantine. A patient removed from the steamship *Yucatan* on the 21st died the same night. All persons from Havana and all other infected ports will be carefully inspected and quarantined.

The report of the Marine Hospital Service at Havana, Cuba, shows that both yellow fever and small-pox are on the increase there.

Professor Leopold exhibited at a recent meeting in Frankfort on the Main, an ovum the size of a lentil, which was found in the interior of a uterus removed from a woman of thirty, for cancer of the cervix. After careful inquiries it was concluded that the ovum had reached the eighth day after conception.

The death-rate from typhoid fever in ten European cities known to have a pure water supply is nearly ten times less than in the same number of cities in this country known to have a polluted water supply.

The Pathologist of the Board of Health of New York City invites the profession to take advantage of the facilities at the command of the department to aid in correct diagnosis of typhoid fever. All the druggists in the city, where antitoxin is sold, have glass slides, between which physicians may place the blood of their patients where they suspect typhoid. These slides

are collected and within twenty-four hours the Board reports whether the experiments confirm or disprove the suspicion of typhoid.

Dr. Jay W. Seaver, '80, of the Yale University Gymnasium, has the following to say about the effects of smoking on the physical development of the body. After experimenting on 187 students he found that the weight of non-smokers increased on an average by 10.4 per cent more than that of the habitual smoker, and by 6.6 per cent more than that of the occasional smoker. The heights of the non-smokers exceeds by 24. per cent the height of the habitual smoker, and by 14. per cent of the occasional smoker. The chest measurement of the non-smoker exceeds that of the habitual by 26.7 per cent and of the occasional by 20 per cent. The greatest difference is in the lung capacity, which was 77.5 more in non-smoker and 49.50 more in occasional than in the habitual smoker.

The Twelfth International Medical Congress meets at Moscow, Russia, August 19-26, 1897. The American National Committee consists of the following. J. S. Billings, M.D., New York; Frank P. Foster, M.D., New York; S. Weir Mitchell, M.D., Philadelphia; Charles A. L. Reed, M.D., Cincinnati; Geo. B. Shattuck, M.D., Boston; F. J. Shepherd, M.D., Montreal; Geo. F. Shrady, M.D., New York; W. S. Thayer, M.D., Baltimore; A. Jacobi, M.D., New York, Chairman.

The Harvard Medical School is giving a course of evening lectures to which the medical profession is invited. The subject for the lecture on December 3d, was "Hearing Tests, and the Importance of Testing the Hearing of School Children."

Investigations have often shown that in the interior of Armenia, girls do not commence menstruation until they are seventeen or eighteen years of age. It has, meantime, been found that they may conceive at a much younger age, such as eleven and twelve; a strong proof that there is no necessary connection between ovulation and menstruation.

#### PRACTITIONERS REGISTERED IN DECEMBER.

| Name.                     | Basis of Registration.           | Where Registered |
|---------------------------|----------------------------------|------------------|
| J. Preston Carver, M.D.,  | Albany Medical College,          | New Hartford.    |
| Ralph M. Whitehead, M.D., | Chicago College Phys. and Surg., | Greenwich.       |
| Jay R. Conklin, M.D.,     | New York University,             | Salisbury.       |
| Allen Hazen, M.D.,        | College Phys. and Surg., N. Y.,  | Greenwich.       |
| Arthur S. Brackett, M.D., | Jefferson Medical College,       | Bristol.         |

Clifford S. Chapin, M.D., Greenwich. Bellevue Hospital Medical College, Jennie E. W. Farrell, M.D., Woman's Medical College of Penn., Somers. Royal Hung. Univ. of Budapest, Norwalk. John Ballagi, M.D., Examined by Conn. Med. Society, Leonard C. Sanford, M.D., Yale University, Medical Dept., New Haven. University of Naples, Luigi Leoni, M.D., New Haven. Examined by Conn. Med. Society.

### MEDICAL PROGRESS.

CHRONIC SULPHONAL POISONING.—Schube (Menrol. Centralb. Oct., 1896). A woman aged fifty-nine had been under treatment for several years for headaches, constipation and restless-For insomnia she resorted to sulphonal in doses of fifteen grains and had taken altogether a half ounce of the drug within a month. She was admitted to the hospital for persistent constipation and emesis. At the time the tongue was dry and furred; a smell of aceton on the breath, great thirst and sleeplessness. The next evening twenty-five grains of sulphonal were given. The following day the urine was scanty, brick-red in color, but contained no albumin. Four days afterwards the limbs were appreciably weakened, the legs to the ankles being anaesthetic. Later, the weakness became more apparent; knee jerk was absent and incontinence of urine and fæces occurred, and the patient died suddenly. The color of the urine was found to be due to hæmentoporphyrin. Schube believed the toxic symptoms due to the obstinate constipation present, causing the sulphonal to be retained in the body longer than usual.

Appendicitis and Perityphlitis. In the Albany Medical Annals for November Dr. Seth M. Mereness has written: "From the statistics of the last decade, and particularly of Fitz and Porter, it may be concluded that an operation is necessary in at least one-half of all cases, and that the mortality, even when an early operation is performed, will be from twelve to fifteen per In general, it may be said that an operation should be advised: 1. In all cases in which a purulent collection is known to have formed in the pericæcal tissues. 2. When a purulent collection cannot be demonstrated, but when signs of perforation of the appendix exist. 3. In all cases in which there is a reasonable doubt as to perforation of the appendix or pericæcal suppuration, but in which symptoms of general peritonitis are present. 4. When, after a reasonable time, the patient does not improve under medical treatment, or in consequence of relapses,

life is rendered unbearable and the patient's vocation cannot be followed. On the other hand, operation is rarely necessary and should not be undertaken: 1. In all cases of simple, acute or chronic catarrhal appendicitis. 2. While the symptoms indicate a purulent inflammation of the appendicular mucous membrane, but when perforation has not occurred and the presence of a marked resistance over the cæcal region shows the peritonitis to be localized. 3. In all cases in which perforation has occurred and has caused a diffuse septic peritonitis. This last generalization being based upon the fact that practically all cases of well-marked septic peritonitis are fatal under any plan of treatment, be it medical or surgical.

A Double Hymen.—Comptes Rendus de la Société Médicale de Tamber.) A young peasant woman presented herself at the consultation of Dr. Oléinine and gave the following history. She had excellent health; began menstruating at fifteen and had been regular since. During the nine months of her married life complete coitus had never been accomplished because very painful. Examination revealed a thickened fleshy hymen with an opening at its upper part. One or two centimeters beyond this and situated in the inferior third of the vagina was a second membrane with a small central orifice. This completely closed the calibre of the vagina, but by a crucial incision of both inner and outer barriers the woman was rendue 4 la vie conjugale.

Muscular Interposition after Resection of Ankylosed Maxilla. — Rochet reports in the *Medico-Surgical Bulletin* three cases in which he has operated with success for temporomaxillary ankylosis. His plan is to expose the neck of the inferior maxilla, from which he removes a wedge-shaped piece. Slips of the masseter muscle—one in front and one behind—are interposed between the resected edges of bone, and sutured to the internal pterygoid muscle. These prevent bony union from taking place.

Three Cases of Basedow's Disease Treated Surgically.—
(American Medico-Surgical Bulletin, Nov. 7, 1896.) The three cases were of the respective duration of twenty, sixteen and eleven months. The operation consisted in the partial resection of the lateral lobes of the thyroid body. As a result the pulse rate fell at the end of a few days. The exophthalmos disappeared in all cases—in one at the expiration of two weeks, in the second at the end of two months, and in the third after six months.

# BOOK REVIEWS.

Twentieth Century Practice of Medicine. Vol. VII. Wm. Wood & Co., New York.

"Diseases of the Pleura," by Herbert B. Whitney. This section is well written and is a good resume of the latest literature on pleurisy. The classification of pleurisies and empyemas etiologically is much needed both for purposes of prognosis and treatment. In the past we have often been unable to classify them in this way but a bacteriological and microscopic examination of the exudate now permits us to do so. The author has brought out clearly the following points relating to the etiology of pleurisies:

1st. The absence of bacteria in a purulent exudate indicates a tubercular origin. In only a small proportion of cases of tuberculous pleurisy are we able to find the B. tuberculosis in the exudate, in the remaining cases the exudate is apparently sterile.

- 2d. The frequency of the pneumococcus in the purulent exudates of children. About seventy-five per cent of the empyemas in children are caused by the pneumococcus, while only about twenty-five per cent in adults can be accounted for in this way.
- 3d. The benignity of pleurisies caused by the pneumococcus. Empyemas caused by this microbe are often cured by a simple aspiration without recourse to a permanent opening.
- 4th. The acute onset and course of pleurisies caused by the pneumococcus and streptococcus pyogmes and the latency of tubercular pleurisies.

There is little new relating to the physical signs of pleurisy and empyema. The author does not attach much importance to the diagnostic value of cardiac displacement with small effusions, stating that on the right side they cause no noticeable cardiac displacement while on the left side they cause a slight displacement. This idea is certainly not in accord with Stokes and others who regard cardiac displacement as a cardinal sign of even small effusions. He denies any but the slightest change of level of effusions with a change in the position. He is inclined to think that a small circumscribed pneumothorax when at the base of the lung is often taken for a small effusion, because of the dull percussion note over it. He makes no mention of the fluorescope which has been used successfully to determine the outline and position of effusions. The indications are clearly

given for aspiration, permanent drainage and resection. The advantage is considered of leaving tuberculous empyemas alone when there is no hectic fever, because of the danger of long continued suppuration with amyloid degeneration of the viscera following operation. The danger of irrigation after opening an empyema is mentioned. Irrigation has caused fainting, epileptiform convulsions and death. The effect cannot be attributed to the kind of fluid used. The paralysis of the extremities which sometimes follows irrigation suggests an embolic origin.

"Asthma," (Franz Riegel). Riegel attributes an asthmatic paroxysm to spasm of the bronchial muscles rather than to vasomotor disturbances or to a spasm of the diaphragm, and thinks that this spasm of the bronchial muscles is proven by the researches of Einthoven. He attaches just weight to external irritants, hypersensitive mucus membrane, bronchitis and enlarged bronchial glands as elements entering into the causation of asthma.

"Hay Asthma" (Ingals). Local treatment has given good results in this writer's hands, but he regards the local trouble as only one of several indications for treatment. A lithæmic and neurotic habit needs treatment also.

"Diseases of the Mediastinum and Diaphragm" (Main). These sections contain little that is new or of interest on the subjects discussed.

"Diseases of the Blood" (Stengel). This is the most satisfactory and comprehensive section of the book. The author regards the hæmatokrit as unreliable in the estimation of the red blood corpuscles. The variation in the size of the red blood corpuscles, he thinks, invalidates conclusions. But the size of the corpuscles alone does not determine the volume but the compressibility of each corpuscle as well. Large corpuscles if more compressible than small ones, may be made to occupy the same space. The value of the hæmatokrit is still subjudice. A series of blood estimations made at the same time with the hæmacytometer and the hæmatokrit in health and in disease can only determine its value. The author inclines to the opinion that leucocytosis is best explained as an effect of chemiotaxis and that it is not so much due to a multiplication of the white corpuscles.

The chapter on chlorosis is suggestive. The reader may admit that thyroid enlargement, enteroptosis, and dilatation of the stomach occasionally occur in the history of cases of chlorosis but he must regard optic neuritis and endocarditis as extremely rare complications and if these conditions were present he would be inclined to treat them as symptoms of some more deeply seated disease than chlorosis. A special section is given to scorbutus in infancy, a disease which has only been recognized in the past few years, and which alone of diseases may have been caused by the advance in our knowledge of bacteria. This disease is attributed by many to the use of sterilized milk. The author prefers to attribute it not alone to this but to the use of condensed milk and prepared foods.

"Functional Diseases of the Male Sexual Organs" (Charles W. Allen). The author treats a difficult subject in a sensible way.

Much of the remaining sections of the book is quite ordinary and apparently introduced as a matter of routine and completeness rather than because it has any especial value in itself.

C. J. F.

The Life, Letters and Journals of the Rev. and Hon. Peter Parker, M.D. By the Rev. George B. Stevens, D.D., with the coöperation of the Rev. W. Fisher Markwick, D.D., Congregational Sunday-School and Publishing Soc., Boston and Chicago.

Rev. Peter Parker (Yale B.A. 1831, M.D. 1834) founded the Ophthalmic Hospital in Canton, China, in 1835, and is justly called the "Father of Medical Missions." For nearly twenty years he labored as a physician and surgeon in the practice in this hospital. His activities reached into all classes, being limited in amount only by his strength. He also took an active part in the evangelical missionary work of his station, and so extended his influence and his knowledge of Chinese affairs that he became of great value to the home government, as shown by the political services which he rendered during the latter part of his residence in China. The career of this man, a fervent-spirited missionary, a skillful physician, and an astute diplomat, is indeed remarkable and interesting, and the story of it as told by Prof. Stevens and his co-laborer is a valuable addition to American bibliography. H. E. S.

Roentgen Rays and Phenomena of the Anode and Cathode. By Edward P. Thompson, M.E., E.E. D. Van Nostrand Company, 23 Murray and 27 Warren street, New York.

This work sketches in chronological order the various researches which have contributed to our knowledge of the phenomena of the discharge tube. The sketches give an outline of the research with full reference to the original articles. To the

student and investigator in this field of electrical science the work must be of much assistance.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D., Demonstrator of Physical Diagnosis in Rush Medical College. Published by W. B. Saunders, Philadelphia.

The second edition of this work has been considerably revised and enlarged from the former edition. The typography and landmarks of the chest and viscera are thoroughly mapped out. The subject of Palpation, Percussion and Auscultation are fully treated, the normal and abnormal heart sounds being especially well brought out. The diseases of the bronchi, pleuræ, lungs, and mediastinum while perhaps too briefly discussed have their diagnostic characteristics admirably described. The book is an aid to the student and a ready reference to the practitioner.

The Physicians' Visiting List for 1897, published by P. Blakiston, Son & Co., Philadelphia, has been received.

The list has been thoroughly revised; dated for twenty-five patients daily. The weekly style contains blank leaves for Visiting List, Memoranda, Addresses of Patients, of Nurses, Accounts asked for, Memoranda of Wants, Obstetric Engagements, Vaccination Engagements, Record of Births, Deaths, Cash Account. This valuable little book contains, in addition, the Metric System, a dose table, giving doses in both English and metric system, Asphyxia and Apnœa, and a new complete table for calculating the period uterogestation.

# ALUMNI AND SCHOOL NOTES.

The catalogue of the Medical School for 1897 gives the following summary of students: Senior class 37, Junior class 41, Second Year 9, First Year 48, special students 3, total 138. The Matriculation examinations have been somewhat changed, the requirement in geometry is omitted and a year's work in Latin added. The requirements are as follows: 1. English—An essay of about two hundred words on some familiar subject to be announced at the time of the examination. 2. Latin—An amount equal to one year of study as indicated in Harkness' "Easy Latin Method." 3. Mathematics—The Metric System of weights and measures; Algebra as far as Quadratics. 4. Physics—Gage's "Elementary of Physics," or some equivalent work.

The Senior class have decided to publish a "Class Book" similar to the publications gotten out by the Academic, Scientific and Law Departments. It will contain as some of its features, the usual class statistics, class poem and individual pictures of the class. L. H. Stewart, '97, has been selected editor and will have charge of the publication.

The faculty have decided to have examinations in Medicine and Pathology in June for the Junior class. Heretofore there has been no examination in these subjects until the end of the Senior year.

- 1894. Hermann E. Arnold, M.D., is to deliver a course of lectures on "Gymnastics" before the Normal School of Gymnastics of Milwaukee.
- 1894. Dr. S. P. Goodhart, specialist in nervous diseases, is located at 261 Crown street three days in the week. The remainder of his time he spends at his office in New York.
- 1895. A. L. House has left Nichols to open an office in Torrington. Dr. House is a member of Fairfield County Medical Association, a graduate of Bridgeport General Hospital and former editor of the JOURNAL.
- 1895. Vertner Kenerson's term of service expires at the New York Hospital January 1, 1897.
- 1896. A. G. Nadler, M.D., of the New Haven Hospital, was the Republican candidate for Councilman from the 6th Ward of New Haven at the recent election.
- 1896. Dr. Wadhams entered upon his duties at the New Haven Hospital on November 15th, having just finished a term of service at the Norwich Hospital.
- 1896. E. L. Smith, M.D., is practicing medicine in Woodbury, Litchfield County, Conn.
- 1897. W. S. Barnes, I. D. Blanchard and G. T. McMaster, will take courses at the Broome Street Maternity Hospital, New York, during Christmas vacation.
- 1898. J. J. Guilshan will take a course at the Broome Street Maternity Hospital, New York, during the Christmas vacation.
- 1899. T. J. Bergin has been sick for three weeks past with malarial fever.

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#### INTESTINAL TOXÆMIA.\*

MATTHEW D. MANN. A.M. (YALE), M.D.,
PROFESSOR OF OBSTETRICS AND GYNECOLOGY, MEDICAL DEPARTMENT,
UNIVERSITY OF BUFFALO.

It is now generally admitted that disease conditions may arise in man through the absorption from the gastro-intestinal tract of toxic substances formed within it. Strong clinical evidence suggests that some kinds of headache, most cases of urticaria, the prostration accompanying attacks of diarrhœa, and even cases of simple anæmia may depend upon the entrance of toxic materials into the circulation. Certain forms of constipation also give rise to symptoms which seem to bear out this idea, and no more striking clinical evidence can be found than the non-septic postpartum rise in temperature familiar to those doing obstetric practice -a rise which rapidly subsides after the free action of a cathartic. As yet, the arguments in favor of this theory rest chiefly upon clinical considerations, and are at present unsupported by accurate knowledge of the nature of the pathological conditions involved. To be sure, a certain advance has been made in the study of processes concerned in the putrefaction of proteid substances in the intestine, and another condition in which certain toxic symptoms are induced follows the absorption This, of course, has nothing to do with putrefaction, but depends upon some abnormal condition of the liver and disturbed conditions of secretion and absorption in the intestine.

<sup>\*</sup>In the preparation of this article, I have drawn largely, often verbatim, from the writings of others. I have used very freely articles by C. E. Simon in the American Journal of the Medical Sciences, Vol. CX., No. 1, and by Herter and Smith in the N. Y. Medical Journal, Vol. XLI., No. 25, etc., and am also indebted to Bouchard's "Lectures on Auto-Intoxication in Disease." The article is, therefore, somewhat in the nature of a resumé.

As yet very little has been done in studying the special forms of bacteria which cause intestinal putrefaction. Perhaps the most important and ordinary excitors of putrefaction are the bacilli of the Proteus type. They are very common and possess to a high degree the power of producing putrefactive decomposition. The Proteus mirabilis is the commonest species. Other putrefactive bacteria are the bacillus pyogenes fœtidus, the B. putrificus coli, and above all, the bacillus coli communis, which is found in putrefying infusions and in normal and abnormal fæces, and elsewhere. The bacillus pyocyaneus is another which might be mentioned.

When the intestinal contents and normal fæces are examined a very large number of micro-organisms are to be found. Even the milk fæces of sucklings are no exception in this regard. The bacillus lactis ærogenes is the most abundant in the small intestine, while the B. coli communis is the most abundant in the large, and besides giving rise to acetic-acid fermentation occasions the formation of large quantities of lactic and formic acids. In catarrhal enteritis the discharges contain much larger number of micro-organisms; while in diarrhæa associated with toxic symptoms one or more species of the Proteus group appear to be constantly present. Indeed, over fifty known species have been isolated from intestinal contents, and in addition to these are many unidentified and perhaps unknown species. The commonest form appears to be the B. coli communis.

The products formed by albuminous putrefaction will depend on the nature and condition of the material, the conditions under which it is placed, and the particular micro-organisms inducing the change. The greatest resistance which is offered to albuminous decomposition is in the early stages of the process—the peptonization of the proteid; and if this be already completely accomplished by other ferments, as in pancreatic digestion, then the conditions are much more favorable for active bacterial growth with the characteristic formation of ptomaines and other putrefactive products.

It will thus be seen that we have not far to go to find a source for the poisons which on being absorbed into the system, from the intestine, produce symptoms of intoxication. The small intestine seems to be the seat of the formation of many of these poisonous elements; while others of a less poisonous nature are found exclusively in the large intestine. It is a well-known fact that the presence of large quantities of desiccated fæces in the large intestine, where they are normally found to a certain ex-

tent, does not produce the marked symptoms of intestinal intoxication which are to be found where there are putrefactive changes going on in the small intestine. After the fæces have reached the large intestine, they become so far deprived of their fluid constituents as to furnish very little material for absorption, and many long-continued cases of constipation, lasting weeks or even months, without any evidences of auto-intoxication speak for the comparative inocuousness of desiccated fæces.

I remember very well a case in which the large intestine was so full as to completely fill the pelvis, forming an enormous mass in the upper part of the abdomen, and yet the woman was in comparative health. The doctor mistook the mass for a tumor, and sent her to me for operation, thinking that the constipation was due to the pressure of the growth. A vigorous use of cathartics brought away a phenomenal amount of fæces, with relief from pressure symptoms, but without any other very material change in the patient's condition, she having, in fact, been scarcely a sufferer at all.

It is stated that in the northerly latitudes chronic constipation is the rule, the bowels being emptied only at long intervals, and yet this practice is carried on without any detriment to the health of the individual. The diet is almost entirely proteid and fatty, from the necessities of the case in this northern latitude.

Baumann has shown that a variety of aromatic substances, including indol, phenol, cresol, catechol, etc., are produced in consequence of the action of anærobic bacteria on proteids, and it has been known that this process of putrefactive decomposition occurs normally to some extent in the human intestine when nitrogenous food is introduced. In 1880 he brought to light the fact that these various aromatic bodies, however, formed within the intestine, are at last eliminated from the body, if absorbed into the blood, through the urine, almost exclusively in the form of ethereal sulphates. This fact is of very considerable importance as giving us a basis for the study of intestinal putrefaction. It is, therefore, of the highest importance to inquire more carefully into the nature of the evidence on which this fundamental proposition rests. I have not time to enter into the details of the experiments made by numerous authorities to prove this point, but must refer the reader to the article by Herter and Smith, where it is very fully explained.

It must be remembered that the use of certain drugs of an aromatic nature may enormously increase the output of the ethereal sulphates, and may thus tend to serious error if the

origin of the excess be not appreciated. Thus we find a great increase in the use of salol, and the use of creosote, must be attended with the same result. This fact being admitted without further argument, it gives us a clue by which we can act. A careful examination of the urine in patients suspected of intestinal putrefaction will enable us to discover these ethereal substances, and a careful estimation of their relative amounts will aid materially in the diagnosis.

The question at once arises how are we to decide whether in a given case the ethereal sulphates are in excess or not; whether we have or have not to do with an example of excessive putrefaction? This you will see at once is of the highest practical The quantity of sulphuric acid excreted daily in importance. health as ethereal sulphates varies ordinarily between such wide limits as 0.12 gm. to 0.25 gm.; but the quantity may be increased to 0.3 gm, or even 0.4 gm, without our being able to say from the quantity alone whether we are dealing with an excess, for the quantity of proteid food taken may be very large and this would give opportunity for the greater activity of putrefactive bacteria in this case. On the other hand, the amount eliminated may lie between the figures mentioned, and thus be apparently normal, but the quantity of food may have been unusually small, so small and of such a kind (milk, meat) as to be accompanied in perfectly normal digestion by the elimination of even less than 0.12 gm. in a day. The mere amount, therefore, does not afford a satisfactory criterion, though it is a help and should always be regarded. A consideration of the relation of the ethereal to the total or preformed sulphates is an important aid to the interpretation of the results. The value of taking into account this ratio was first emphasized by Van der Velden. The use of the ratio is based upon the fact that in normal persons the average ratio of the ethereal to the preformed sulphates is not higher than I to 10 or perhaps 1 to 9, and is even on a mixed diet so low as 1 to 12 or 1 to 15. Herter says that persons in the best of health have more frequently a ratio of 1 to 12 than 1 to 10. phates have nothing to do with putrefaction, but are derived from the sulphur which the food contains. It thus happens that the total sulphates bear a relation to the total amount of proteid absorbed, which is in turn related to the total amount of proteid ingested. When we say, therefore, that the relation of the combined to the preformed is found to be in the neighborhood of 1 to 10, without much reference to the amount of food ingested, this is very much the same as saying that in normal

conditions the opportunity for the activity of putrefactive bacteria in the intestine seems to be proportioned to the amount of proteid food taken.

The use of the ratios is thus equivalent to taking into consideration the amount of proteid food ingested and absorbed. While this method is, generally speaking, reliable, and furnishes very good evidence of the condition of the digestive processes of the intestine, it is by no means absolute and should not be employed blindly, and this leaves cases in which it is difficult to reach a satisfactory conclusion as to whether the ethereal sulphates are present in excess or not.

There is one of the group of aromatic sulphates which is of particular importance, partly because of its presence and partly on account of its frequency and of the readiness with which its presence is ascertained. I refer to indican or indoxyl-potassium sulphate. It is derived from indol, which is formed in the intestine from putrefaction of proteids. The occasional appearance of small amounts of indican in the urine of an adult does not necessarily mean any appreciable disturbance of digestion, but the regular occurrence of even moderate amounts is always associated with evidence of putrefactive disorder, and must, therefore, be regarded as abnormal. It is very difficult to express by figures the quantity of the indigo blue in the twentyfour hours which must be regarded as pathological, for the general state of the patient must be taken into consideration; also whether the condition of health is less good when indigo blue is present than when it is not-whether or not, in fact, symptoms can be with reason associated with its presence. A mere trace probably cannot be considered distinctly pathological, while an amount greater than 5 milligrammes in the twenty-four hours must in the great majority of persons be considered as showing something wrong. In children even a smaller amount is to be considered pathological. Some authorities consider that indican in amounts greater than traces is always associated with evident disorder of digestion.

The relations which indican bears to the ethereal sulphates is, unfortunately, not fixed. There is, generally speaking, a rough correspondence between them, but to these rules there are many exceptions. There are cases where the ethereal sulphates are normal, both as regards totals and ratio where indican is present in pathological amounts, and perhaps in greatly increased amounts. There are likewise cases, and they are even more numerous than those just mentioned, where the total

ethereal sulphates are in pronounced excess, and where indican is altogether absent.

Another substance which is sometimes found as a result of intestinal putrefaction is carbolic acid, or phenol. It may be derived in part in the intestine from the breaking-up of the tyrosin. It is absorbed as phenol, but somewhere in the body is converted into the sulphate of potassium. Little is known of this substance, but it has been found by some observers that it is increased in certain diseases. Thus it has been found in excess in ileus, in peritonitis, anæmia, diabetes, and so on. The presence of these substances in the urine is thus shown to be of immense diagnostic value. We must, however, try and give a picture of the clincial symptoms.

Usually there is obstinate constipation, or sometimes the exact opposite condition, diarrhœa, exists. Intestinal flatulency is almost always present. There may be abdominal pain and a sense of fullness in the abdomen after meals. The movements are often very offensive in odor and contain considerable mucus. Usually the appetite is good, and the amount of food ingested more than normal. In many instances there are nervous symptoms, especially noticed at night, dreams and intervals of wakefulness; in other cases there will be severe headache. is not uncommon, though not an unfailing symptom. In many cases there is a feeling of "goneness" in the epigastrium, which is relieved by the taking of food, but as the relief is very temporary, it is quite evident that the symptom is not due to emptiness of the stomach, as it comes on before that viscus could possibly have emptied itself. A feeling of lassitude and general debility, disinclination to exertion, is very common; the patient complains of feeling tired all the time, and that he has no strength to accomplish anything. The spirits are often very much depressed, and some of the patients complain of loss of memory and confused feelings in the head, so that they cannot think continuously on a given subject for any length of time. It is not at all uncommon to find associated with this condition scanty and highly acid urine, with excessive output of uric acid and all the symptoms due to an irritating quality of this secretion. I have found the condition quite common in patients suffering from uterine disease, where it is often associated with eye strain.

The character of the excretions deserve a little more attention. They are very often clay color, and there is some reason to ascribe this condition to defective secretion of pancreatic

juice. The presence of fat in excess in the fæces is frequently met with, and is always to be regarded as due to the want of pancreatic juice or bile, or both.

While constipation itself cannot be put down as the cause of the increased absorption of the putrefactive products with the increase present in the urine, still it should be remembered that there may be in some cases an abnormal delay in the passage of fæces through the intestine, although there is a daily movement. Such a condition, if it occurs, would constitute a virtual, if not an apparent, constipation, and might be responsible, in some measure at least for the appearance of the high ethereal sulphates. More investigation is needed on this matter.

The abdominal pain which I have mentioned is not a constant symptom. However, it occurs pretty frequently. It is spasmodic and migratory, referred first to one place, and then to another, usually to the lower part of the abdomen. The pain may be ascribed to colic associated with flatulence, and there may be some degree of abdominal distension. The pain is doubtless due to spasm of the muscular coats of the intestines, due to irritation of the imperfect digestion or putrefaction of the The length of time at which such pain comes on after eating does not aid in the determination of the origin of the pain, as the gastric and duodenal digestions go on together. In many instances there is great tenderness on pressure over a limited area a little below the sternum, suggesting organic stomach disease. This I have frequently noticed. Exactly how to explain this pain and tenderness is not clear. I have a patient under treatment now in whom this symptom is marked and is best relieved by a thorough washing-out of the large intestine.

There are reasons to think that the epigastric pain and sensation of goneness which has been referred to may be due to imperfect and perverted digestion in the small intestine, even where there is no evidence of excessive putrefaction. It certainly is true that there may be intestinal indigestion without putrefaction.

The stomach, of course, may be the starting point; or we may even go back further and attribute it to imperfect admixture with the food of the salivary secretions. Food not properly masticated and imperfectly mixed with saliva and then imperfectly acted upon in the stomach is certainly not in a condition to be properly digested by the intestines; so that all the steps in the process must be interrogated to find out the starting point.

Simon maintains that what keeps the intestinal putrefaction within what may be considered physiological limits is free hydrochloric acid of the gastric juice. He maintains that the indican elimination may be regarded as running a course parallel to the degree of antiseptic (namely, germicidal) activity of the gastric juice—that is, the amount of free hydrochloric acid.

So far I have indicated that most of the intestinal intoxications were due to excessive intestinal putrefaction. It must not be forgotten as I stated at the beginning, that there are other sources of poison to be met with in the intestine. Bile plays, without doubt, an important part in digestion, but it is also a constituent of the excreta and undergoes in part absorption. Can the part absorbed produce intoxication? The blood just come from the intestine contains bile, but there is none present normally in the general circulation. The liver, therefore, filters out the bile, probably secreting it anew. This perpetual circle acts as a protector to the general circulation, both as regards bile and possibly other poisons. This is, of course, somewhat theoretical, but is believed by many physiologists. Experiments made by Vulpian, Bouchard and others show that bile is certainly toxic. The biliary salts have been declared to be the toxic principle. They have been found in the blood in those who have died of severe jaundice.

Other agents, like cholestrine, are thought to have some influence. The kidney seems to be the safety valve for persons poisoned with the bile products, and when these organs are acting freely the moderate amount of bile poisons absorbed is quickly excreted and the system receives no harm. Much further study is needed before many of the questions regarding the liver and the toxicity of bile, and the peculiar agents in the bile which are poisonous, are fully understood. The condition familiarly known as biliousness has generally been looked upon as a disturbance of the liver, though authorities disagree as to exactly what goes on. That the condition is a common one, and that it is really an intoxication due to a disturbance of the liver is generally accepted. Its prompt relief by agents which are known to act to increase the excretion of bile would certainly seem to prove this fact.

In the short space allotted to me I cannot discuss this whole matter. There is an immense and highly interesting literature to be found which is worthy of more attention than it has yet received by the general profession. If now, putrefactive changes in the food, especially in the proteids, can be diagnosed by careful examinations of the urine, with careful study of clinical symptoms, we are in position to make a diagnosis of the condition, and, therefore, we must needs treat it. To this end there has been a great search after some agent which, being introduced into the stomach, would pass into the intestines and prevent putrefaction, an intestinal antiseptic, so-called. A multitude of agents have been suggested, the one which seems to meet with the most favor being naphthalin. I have heard men high in the profession speak very highly of its use. I must confess that I have not used this class of agents to any great extent. The subgallate of bismuth has disappointed me, and so have nearly all of the agents which I have tried. Benzosol has lately been suggested, and is certainly worthy of a more extended trial.

If the theory of Simon be correct then there can be no better intestinal antiseptic than H Cl. Practically this seems to work with satisfaction in some cases.

Very careful regulation of the diet and the careful attention to the general surroundings, environment and hygiene of the individual, seem to me to be the best agents. I mean by this the proper ingestion of water, the use of massage, exercise, fresh air, sunshine and so on.

I have only within a comparatively short time taken up this matter, and, therefore, I have not a large experience to speak from. That these cases are common, that they demand our attention, that they cause an immense deal of suffering, and that they can be relieved by proper treatment, are points which are self-evident.

# A STUDY OF THE CELLULAR PATHOLOGY OF CARCINOMA.\*

CLIFFORD WALCOTT KELLOGG, M.D., NEW HAVEN, CONN.

It is not the intention of the writer, in the following paper, to enter at all into a general discussion as to the etiology of cancer. To do so, in the present state of our knowledge, would be simply to theorize, to indulge in useless speculation, adding rather to the mist of obscurity that enshrouds the origin of these growths than being of any practical or suggestive value.

This mist of obscurity, however, it may be said, is no denser, the veil no thicker than that which up to a comparatively recent period enveloped a number of the diseases with which mankind is afflicted, diseases which we now know to depend upon the presence of a specific organism. One after another of these so-called "microbic affections" have yielded, in so far as the causative agent is concerned, to the careful, patient investigations of the pathologist. There are still many, however, that remain refractory, refusing as it were to disclose the secret of their birth, and among them, overshadowing all perhaps, in the matter of importance to human kind is the one now under consideration—carcinoma.

The genesis of cancer is no longer in doubt; the studies of Waldeyer and of Thiersch having demonstrated almost beyond the possibility of question that it involves that of epithelium generally. Aimless, purposeless, destructive growths then, the proliferative and infiltrating elements of which are epithelial cells—cells always derived from preëxisting epithelium, standing invariably in a direct genetic relation to tissues originating in the epiblastic or hypoblastic layers of the blastoderm.

In so far as this, our knowledge of the pathology of cancer may be said to be accurate; but here it practically ends. The question now is, and the answer is all important: What furnishes the stimulus for this aimless, infiltrative growth of epithelial elements? What causes these tissue cells to leave their normal situation and by a process of excessive multiplication and

<sup>\*</sup>This thesis received "honorable mention" in competition for the Keese Prize, Yale University Commencement, 1896.

proliferation not only to force their way into the lymph-spaces of adjacent structures, but to reproduce themselves in even remote parts of the organism?

Theories without number have from time to time been advanced, our works on pathological science teeming with them, admitting, the while, that they are but theories. continued mechanical irritation has been assigned as a cause the failure of an organ, like the female breast, to perform its physiological functions—developmental faults, as the aberrant embryonic remains of Cohnheim-errors in nutrition dependent on trophic neuroses—loss of balance, in after life, between the connective and epithelial tissues, with insubordination of the latter (Thiersch); all of these and a host of others have been assigned a place among the etiological factors, and in a certain way, perhaps, they may all be entitled to such a place. example, long-continued mechanical irritation is unquestionably. in very many cases, associated with cancer; as witness the often quoted scrotal cancer of the sweeps, the arm of the paraffin worker and the cancer of the lip in smokers of clay pipes. thousands of such cases, however, of prolonged irritation no cancer appears, and, per contra, in hosts of cases of cancer no history of such irritation can be obtained.

In view of these last considerations, we are certainly justified, for the present at least, in holding to the opinion of Cohnheim, that while most if not all of the factors mentioned have a place in the pathology of carcinoma, they tend rather to produce a constitutional, or it may be a local predisposition to the disease than to act, per se, as primary or proliferative causes; that a certain weakening or diminution of the normal physiological resistance of the tissues is produced, whereby morbid influences, at other times wholly inoperative, are enabled to produce their characteristic effects.

Billroth rather aptly defines this vague "predisposition" as a "specific formative irritability" of the tissues; while the acting morbid influence is referred to as a "specific formative stimulus." Adopting, then, Billroth's terminology ("The Mutual Action of the Living Animal and Vegetable Cell," New Sydenham Soc., 1894) as the more explicit of the two, it would seem as though we are warranted, as has been said, in considering that the various forms of irritation, et al., act by producing a "specific formative irritability" rather than as "specific formative stimuli." And yet for the production in various and varied situations of neoplastic formations as specific and unvarying in

type as cancer, there must exist a form of stimulus, and a farreaching and a continuously-acting stimulus that cannot be considered as otherwise than specific.

There are some features that characterize the growth of a carcinomatous tumor that seem to point to an analogy between them and certain other tumor formations that were some years ago classed by Virchow as "infective granulomata." Thus that which was said by Dr. Green of a tuberculous deposit may with slight modification be equally well said of a cancer nodule: "The progressive character of the growth and its tendency to infect adjacent and distant portions of the body show the existence of some irritant capable of multiplying in the body and of spreading from primary to secondary foci."—Green, "Pathology and Morbid Anatomy," seventh Am. ed., p. 554.

This resemblance to a tuberculous process, this tendency to spread from primary to secondary foci, taken in connection with the characteristic cachexia that marks the progress of a carcinomatous growth, has led to the belief, now more or less widely spread, that cancer itself is of an infectious nature, even though its inoculability from man to man be not absolutely proven. Add to these features a certain observed tendency to hereditary transmission, if not of the disease itself, to at least a predisposition to the disease, and it is little to be wondered at that the belief in an infective or parasitic origin should have become, in the minds of some pathologists at least, quite firmly implanted.

This idea having taken root it is hardly necessary to state that a most active search for the infective agent has for a number of years been carried on; with results that are certainly interesting, not to say startling, even while they astonish one by their variety.

Inasmuch as this paper has to do with some of the appearances that in a measure give color to this theory of parasitism in cancer, it may be well to state here that the bibliography upon the subject is already enormous; so much so that any extensive reference to it is unnecessary and in a limited space impossible. With the exception, then, of a few casual allusions, the writer will content himself with a more or less imperfect demonstration of what may be found here at home in specimens of cancer met with in ordinary routine work.

In 1888 it will be remembered that Neisser, of gonococcus fame, published an elaborate paper embodying the results of his investigations into this subject, and placing the "parasite," which he described, in the *Coccidia* group of the Sporozoa

("Vierteljahrschrift für Dermatologie und Syphilis," 1888). A little later (British Medical Journal, December 13, 1890) Dr. W. E. Russell of the Royal Infirmary, Edinburgh, described and depicted a so-called parasitic organism, presenting the appearance of round, homogeneous bodies, staining deeply with basic fuchsin and retaining it strongly when treated with other reagents, such as iodine-green. These he denominated "fuchsin bodies," considering them of a fungoid nature.

Contemporaneously with these, and continuing up to the present time, a host of other observers have described microscopic appearances attributed to result from the presence of an organism; some considering it to be a Fungus or Alga, others a Protozoon. Thus, Soudakewitch, Pio Foà, Thoma, Metchnikoff, Korotneff, G. Sims Woodhead, Ruffer, in conjunction with Walker and Plimmer, C. H. Castle and a host of others have, from time to time, described appearances that, whether dependent upon the presence of a parasite or not, demand, from the very importance of the subject, the closest study on the part of every student of pathology.

The assumption, on the part of these observers, that we are dealing with a parasitic organism, has, as is to be expected, met with a storm of criticism from pathologists of the highest repute. Thus, Klebs, Cornil, and, in our own country, Welch of Johns Hopkins University, Prudden of New York, and others, while admitting the appearances question the probability of their being due to a parasite, and ascribe them to various sources, to which we will refer later. Looking, however, at the matter from both points of view, weighing the evidence as we get it from the literature, pro and con, and it becomes at once manifest that we are not by any means justified in taking too radical a stand upon this subject; that there must be something to warrant the opinion of such men as Pio Foà, Thoma, Russell, Ruffer and G. Sims Woodhead, and, such being the case, careful and systematic study is the course that should be pursued, rather than the maintenance of a position of sceptical inactivity.

The feature that strikes one most forcibly, on looking over the various articles upon this subject, is the lack of uniformity in the results obtained. And it is this very feature perhaps that more than any other leads conservative minds to maintain a sceptical attitude, and it was this feature that led, in part, to the series of investigations that form the basis of this article; one of the objects having been to ascertain what there was in the microscopic appearances of cancer that should lead Dr. Russell to describe a round, homogeneous "fuchsin body" as a Fungus, while Neisser described a Protozoon; albeit the boundary line between the two is by no means well defined.

In addition to this, the writer, in making these investigations, hoped to be able to satisfy at least himself as to the following points:

- 1. Whether in the specimens of cancer met with in ordinary class-room and routine work, without special methods of hardening and fixing, microscopical appearances could be found that might be interpreted as indicating the presence of an organism or body foreign to the tissues.
- 2. Whether these appearances are to be demonstrated in all specimens of carcinoma.
  - 3. Whether they are peculiar to the carcinomata alone.

The possibility of being able to definitely determine the nature of these bodies was also considered, but it must be admitted, scarcely hoped for.

In selecting the material for these studies it will suffice to say that, with a few exceptions, it was taken from the ordinary material provided for laboratory work in the Medical Department of Yale University, under the supervision of Professor M. C. White. A few specimens, however, were personally prepared by the writer from tissues derived from various sources.

As to methods of fixing and hardening, they were various; chiefly, however, a simple passing of the tissues through alcohols of progressive strengths; as, for example, 55 per cent, 67 per cent, 75 per cent, 82 per cent, and finally into 95 per cent, in which the specimens were kept. One or two specimens, involving nervous tissues, were hardened in "Müller's fluid," while one or two were fixed in a saturated solution of corrosive mercuric chloride for an hour, thence passing through progressive strengths of alcohol, as above. It will thus be seen that "especial methods of fixing and hardening" can hardly be said to be a predominant factor in the production of the appearances about to be described.

With regard to embedding and cutting of sections, all of the methods in common use were employed; thus, some were embedded and cut in paraffin, some in celloidin and some were cut by the aid of the freezing microtome.

As to the methods of staining, a few words may well be said, although they will be made as few as possible.

Inasmuch as the first studies were devoted to the "fuchsin bodies" of Dr. Russell, the methods of staining employed by

him were naturally first made use of. He, it will be remembered, stained his sections first in a 2 per cent solution of basic fuchsin in 5 per cent carbolic acid; they were then placed in a 1 per cent solution of iodine-green (Grübler's) which replaced the fuchsin in everything but the above-mentioned bodies (op. cit.).

The writer soon found that practically the same or better results could be obtained with fuchsin and methylene-blue; there being no difficulty in demonstrating, in many sections of carcinoma, the rather characteristic, deeply stained, homogeneous bodies referred to. They vary in size from four to eleven or twelve micro-millimeters in diameter, and are met with singly, in twos, or threes, or in clumps of four or five lying both within the protoplasm of the cells and in the intercellular spaces. They are not confined, however, to the carcinomata, for a section of lympho-sarcoma now at hand shows them in large numbers.

Not wishing at this time to devote much space to these bodies the writer would suggest, in taking leave of them, that they certainly merit close study. Red blood corpuscles readily take up and strongly retain basic fuchsin; and there are certainly in some of these "fuchsin bodies" appearances that suggest red corpuscles. There is, however, rarely so much variation in the size of the corpuscles, and they are almost never found within the cell protoplasm, although the writer has in one or two instances so found them.

Again the variation in the size of the "fuchsin bodies" serves as no real basis of distinction. As is well known we may have in certain pathological conditions the greatest diversity in the size and appearance of the red corpuscles. Thus in chlorotic conditions and pernicious anemia the so-called *microcytes* and *macrocytes*, as well as the huge "giganto-blasts" of Eichhorst, twenty micro-millimeters in diameter, are of frequent occurrence. For all this the writer, after careful study, is not disposed, for many reasons, to regard these "fuchsin bodies" as red blood corpuscles; their precise nature, however, it is impossible at present to state.

While still engaged in the study of these bodies, with other reagents than methylene-blue and fuchsin, certain appearances presented themselves from time to time, in some sections of carcinoma, that were not explainable by ordinary methods of reasoning. For instance, in staining with such combinations as hematoxylin and safranine, hematoxylin and acid fuchsin, and hematoxylin and eosin, there appeared to be certain enclosures in some of the larger epithelial elements that differed in appear-

ance from the cell nuclei, and also from the bodies previously described, and yet the differentiation was not sufficiently well marked, both nuclei and enclosures staining with hematoxylin, to warrant an expression of opinion as to their nature.

Without going too much into detail it will suffice to say that in the attempt to further differentiate these enclosures there was no staining reagent, or combination of stains in common use, but that was made use of, with, however, but indifferent success. At length attention was directed to an article or paragraph in Landois' "Physiology" (4th ed., p. 389), on the beautiful results to be obtained in the demonstration of the nuclear figures that appear during the process of mitotic or indirect cell division (karyokinesis) by the use of a reagent now widely known as the "Ehrlich-Biondi" triple stain.

A trial of this reagent soon showed that by its use the enclosures mentioned above, the cell nuclei, and in fact, all of the component parts of the tissues could be differentiated with almost diagrammatic effect.

This "Ehrlich-Biondi fluid," as it was formerly called, owes its introduction really to Heidenhain, and is a mixture of methylgreen, methyl-orange or orange G. (Grübler), and acid fuchsin; (Rubin S. "saure fuchsin"). It is prepared by Grübler in a dry form ready mixed for use, 100 cubic centimeters of a 0.4 per cent solution, with the addition of 7 cubic centimeters of a 0.5 per cent solution of acid fuchsin (both aqueous) making the ordinary desk reagent. The method of using is given in nearly every recent work on histology.

Staining with this reagent secundem artem, using thin sections, cut in paraffin and with careful attention to technique we are told to expect the following results; the nuclei to appear of a bright green, the cell protoplasm taking an orange red or a reddish orange, while the connective tissues appear of the vivid or crimson red of the fuchsin.

Briefly, while we expect these results we don't always get them. At the best the stain is an uncertain one, acting at times and with certain tissues in a most inexplicable way. In this the experience of the writer coincides, I think, with that of most microscopists. At the same time, with all its uncertainities, it is a most invaluable aid in histological studies; a well-stained section presenting a beautiful picture, and one that as has been said is almost diagrammatic.

Attention may be called to the fact that certain methods of hardening are not compatible with the use of this stain; thus in sections hardened in "Müller's fluid" the cell nuclei appear of a peculiar blue color, while the protoplasm appears of a rosy red, lacking, however, entirely in orange. Again embedding in paraffin seems to produce the only perfect results, inasmuch as sections cut in celloidin rarely show any orange in the protoplasm, unless it be after excessively long exposure to the stain. Embedding in paraffin, however, in itself leaves, in many cases, much to be desired. In tissues particularly of an encephaloid or purely cellular type, a marked and detrimental shrinkage is sure to take place. With celloidin this does not occur; and in such tissues it is vastly to be preferred. The slight differences in staining incurred by its use, are after all, but differences of degree; and to one at all practiced in histological work in no way impair the usefulness of either the reagent or method of embedding.

Returning now to the enclosures that have been referred to as occurring in certain of the epithelial cells of some sections of cancer, we may consider the appearances produced by the use of this "Biondi" reagent.

These, in the main, do not differ from those above described; but there appear in many of the cells, bodies that stain differently, and in other ways present an appearance entirely unique.

These enclosures appear to be of two kinds. Thus some of them appear to possess a distinct capsule or wall of a vivid red color, a protoplasm that remains colorless, and a small distinct nucleus either centrally or laterally placed and which is also of a bright red. They are almost invariably contained within the cell protoplasm, it being very unusual to find them extra-cellular in position. They are found singly, in groups of two and three, or more, while in some cases the cell appears crowded with them, the nucleus being displaced or, as occurred in one instance, having entirely disappeared. In size they vary from scarcely more than two or three micro-millimeters in diameter up to twelve, or possibly fifteen or even more.

The other form presents an appearance entirely distinctive from this. In the first place they are never so small, rarely falling below twelve micro-millimeters in diameter. They are also perfectly spherical, have a small distinct nucleus, but the protoplasm stains most decidedly; appearing of an indescribable lilac color, or of even a distinct bluish red; the nucleus itself being of a more decided red. They are rarely found otherwise than one in a cell, although two cells containing them may be closely approximated. They never appear in groups.

Reference to the accompanying plates will give a better idea of these enclosures than could be obtained from pages of text.

The sections from which these drawings were made were taken from perhaps six or eight selected specimens of carcinoma, including both primary and secondary growths. All of these, I think, with one exception, were removed by Professor W. H. Carmalt, at the New Haven Hospital, during the past year. This exception, and the one most prolific in the matter of "enclosures," was a secondary growth of an "encephaloid," or purely cellular type, involving the cerebellum and resulting in death. The primary growth was a scirrhus cancer (fibrocarcinoma) of the breast, which was also removed by Professor Carmalt some two years before.

The results embodied in these plates, with the brief appended description, may be said to be the results of something more than a year's study into the microscopical appearances of the carcinomata. Sarcomatous tissues have also come in for their share of study, with results that, while of great interest, are as yet too imperfect to warrant a consideration of them at this time, even if space permitted.

As to the "cancer bodies," or enclosures, the writer simply presents them as evidence corroborative of the results obtained by other pathologists. As will be noted, they correspond, except in minor details dependent in part upon a difference in "technique" in preparation, to the bodies described by, at least, Ruffer and Pio Foà. The results obtained by other observers are strangely at variance, and, it must be admitted, unexplainably so.

For a discussion, pro and con, as to the nature of these bodies, it is sufficient to refer to "Sajous' Annual of the Universal Medical Sciences," for 1895.

With regard to Cornil's idea that they are simply invaginated cells, it is hardly to be thought of when we refer to the examples of this depicted in Plate I., Figs. 4, 5 and 6, and Plate III., Fig. 24. Dr. Welch of Johns Hopkins in expressing the opinion\* that they are fragments of eleidin or kerato-hyalin, or other products of protoplasmic degeneration, is probably in error. If such were the case, fragments of eleidin or kerato-hyalin, under similar treatment, would present the same appearances in normal tissues, and the same may be said regarding other explanations that have from time to time been offered.

A process of endogenous cell formation has been suggested

<sup>\*</sup>Quoted by Dr. Ruffer, Jour. Pach. and Bact., 1893.

as explanatory of these appearances; but here again comes in "control sections" of other instances of exceedingly rapid cell proliferation, such as granulation tissue and certain forms of rapidly growing adenomata. Such appearances, arising from endogenous cell formation, or any other method of cell formation are not, and, so far as the writer's knowledge goes, never have been demonstrated in these or other tissues.

Mastzellen, the so-called "feeding-cells" of Altman, have also been mentioned in this connection, for no other reason that the writer can see than that certain of the Protozoa in their early stages present the appearance of a simple mass of granular protoplasm. These Mastzellen are very abundant in certain rapidly growing tissues, as, for instance, in young animals, such as the sheep, where they may be readily demonstrated in the lung. They are also met with very frequently in the human subject, and are particularly noticeable in some sarcomata.\*

Professor Klebs, in June, 1890, refers to these enclosures as hyaline bodies, and is "decidedly disposed to regard them as degenerative products" (*Deutsche Medicinische Wochenschrift*, Nos. 24, 25, 32, June, 1890). Without, however, going into the discussion further, it may be said that the foregoing sum up the most rational attempts at explanation of these appearances, aside from those in which they are regarded as Protozoa.

In so far as the writer's experience goes, these enclosures, as above described, are peculiar to the carcinomata. Professor M. C. White states that he has met with one or more in a section of apparently normal kidney. The writer, however, had no opportunity of examining it. A. A. Kanthack says (British Medical Journal, March 14, 1891): "These organisms, whether we call them Protozoa, or psorospermiæ, or sporocysts, or what not, occur, and even frequently, in other diseases, even in apparently healthy tissues." Be this as it may, the study by the writer of over a thousand sections of various tissues has failed to show them in any other situation.

As to their occurrence in all carcinomata as much cannot be said. Some sections have failed to show them, but sections from another portion of the tumor, possibly, might have done so. In the vast majority of instances, however, they are to be found without great difficulty. They are more abundant, seemingly, in soft, rapidly growing cancers, as for instance, the encephaloid growth above referred to. They are also more

<sup>\*</sup>See Plate I., Fig. 9.

readily demonstrated, apparently, in secondary growths, although this cannot be said to be invariable. They cannot be said to be everywhere present, or, as a rule, abundant. One may have quite a search without finding a single enclosure, while again a solitary field may show half a dozen or more. As has been said, they are almost invariably contained within the protoplasm of the cell. The writer has never found one within the cell-nucleus, and in but one or two instances have they appeared outside the cell.

A short time since, the writer was enabled, through the courtesy of Dr. Charles J. Foote, to see the colored plates, to gether with original paper, of Ruffer and Walker (Jour. of Path. and Bact., 1893). Engravings, however, prepared from these, appear in Green's "Pathology" and "Morbid Anatomy" (7th Am. ed.).

Dr. Ruffer employed the "Ehrlich-Biondi" stain with good effect, describing, however, an orange cell protoplasm with a parasite (?) of "Cambridge" blue. Precisely his effects the writer has been unable to obtain, but it is to be noted that he embedded and cut in paraffin, while the drawings that accompany this paper were from tissues cut in celloidin. Again, Dr. Ruffer describes the parasite as refractory to hematoxylin, while Pio Foà ("Annual Universal Medical Sciences," 1894), demonstrated his bodies most satisfactorily by its use. The writer finds, with him, that they stain very readily with ripe hematoxylin (Gage's), but inasmuch as the cell nuclei do the same, it requires a practised eye to differentiate them.

We have thus, in a necessarily brief and incomplete way, studied some of the appearances that, as has been said, in a measure tend to give color to the theory that cancer is dependent upon the presence and growth of a specific organism, and we have also considered, in part, the various explanations that have from time to time been offered to account for these appearances. Most, if not all, of these attempts at explanation, however, are manifestly inadequate and by no means cover the entire ground. and hence it is useless, in the face of such a mass of evidence as has accumulated, to attempt to deny that the cells of carcinoma, in many cases, contain structures that, if we can relv upon our present teachings in the science of histology, are not an At the same time, however, we integral portion of the tissues. are forced to admit that evidence as to their precise nature is wholly and entirely wanting. And this must be so, inasmuch as at present we are dependent upon mere morphological appearances for our knowledge, rather than upon biological detail, and a knowledge of the life history of the organism, if organism it be. Artificial cultures have been attempted, but up to the present time have not been successful. We are hence compelled, as it were, to suspend judgment, bending our energies meanwhile to the development of thorough and systematic methods of study, methods which involve the study of the living, growing cancer, rather than that of simple microscopic sections alone.

The fact has been before referred to that Neisser (loc. cit.) was among the first to regard these structures as Protozoa (class In this he is supported by Sporozoa, sub-class Coccidia). nearly all of the recent observers, including that most accurate of zoologists, Metchnikoff. Even the great Billroth inclines to the same belief (op. cit.). He was apparently much impressed by the investigations of Bollinger and J. Pfeiffer into the etiology and pathogenesis of the infectious epithelioma of birds; they stating as follows: "The epithelioma formation is brought about by the immigration of the germs of a Protozoon of the class of the Sporozoa (Gregarinæ) into the cells of the Rete Malpighii. Whilst the cells affected by the parasite are entirely consumed up to a narrow border line, and the nucleus pressed against the cell wall, a proliferation of the still intact epithelial cells in the neighborhood of the invaded region takes place, the progeny of which are successfully invaded by the parasite."

The simple comparison of this description with some of the appearances in the accompanying drawings\* in itself furnishes some food for thought.

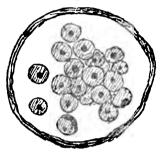
For the best brief exposition of the life history of the Protozoa themselves, the reader, perhaps had better refer to Lankester's article in the "Encyclopedia Brittanica. A few words, however, based upon his terminology may perhaps be offered as a fitting conclusion to this paper.

"Protozoa," as is well known, is the name applied to the lowest grade of the animal kingdom, being sharply and definitely distinguished from the higher groups of Metazoa and Enterozoa by the fact that they are structurally single cells or units of protoplasm; whereas the latter consist of aggregations of such units, which are embryonically arranged into two, or in the highest types, three layers. While, however, the Protozoa are essentially unicellular organisms, this is by no means always the

<sup>\*</sup> Plates II. and III.

case; as many consist of aggregations of such cells with, however, this marked and peculiar distinction, there is no differentiation into embryonic layers, and each component cell is capable at any time of taking up and maintaining an *independent* existence, the cohesion between the cells having no economic significance.

As distinguishing the Protozoa from the lower grades of plant life—the Fungi and Algæ—we have the one great feature that marks plant life as distinguished from animal life in the higher orders; the plants are synthetical, capable of elaborating



Cyst of Klossia helicina.

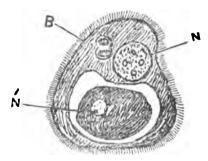


FIG. 29.

Renal cell, from *Helix hortensis*, containing full grown Gregarine. *Klossia helicina* (copied from Lankester). Compare with Figs. 16, 17, 18 and 26. N. Cell nucleus. N. Body, nature unknown. B. Nucleus of *Klossia*.

their nourishment from the simplest compounds, as carbonic acid and ammonia, while the Protozoa, like other animals, require the preformed higher organic compounds for their nutrition. (The somewhat anomalous position of some of the Fungi it is unnecessary to discuss here.)

The Protozoon individual, then, is a simple mass of protoplasm, varying in diameter from  $_{70}^{1}_{00}$  of an inch up to an inch (as witness the gigantic Nummulites). In common with other forms of animal life, they are endowed with the power of motion, possess a certain irritability, and are capable of growth and reproduction. Perhaps not their least important characteristic, when considered in connection with cancer, is that of "producing by chemical processes that take place in their substance (over and above those merely related to nutrition) a variety of distinct chemical compounds, which may form a deposit in or beyond the superficial protoplasm of the corpuscle, or may accumulate centrally." It will be noted that there is every possibility of these chemical products producing analogous effects to the so-called "toxines" of the pathogenic bacteria.

As to modes of growth and reproduction, the Protozoon follows the same course as tissue cells in general. While simple binary division is the rule, it is very usual that under given conditions the Protozoon breaks up rapidly in from ten to a hundred little pieces, each of which leads an independent life and grows to the form and size of its parent. This is shown in Fig. 28, where the Protozoon has gone on to the formation of a cyst, the contents of which break up into a number of chlamydospores (coated spores). The analogy to Figs. 15 and 23 is very striking.

A discussion as to the part played by various Protozoa in the life drama of both vertebrates and invertebrates, while of exceeding interest, is impossible at this time. As is well known they are intimately associated in the human family with Paget's disease of the nipple, with the so-called Keratosis follicularis and with Molluscum contagiosum. The often-quoted Coccidium oviforme, that so frequently occurs in the liver of the rabbit, particularly of those that inhabit marshy districts, not infrequently gains access to and excites inflammatory processes in the human liver. The so-called "Rainey's tubes," or "sacs of Meischer." that occur in the striated muscle fibers of the hog (Sus scrofa), are simply the chlamydospore cysts of a Protozoon, in the majority of cases being filled with falciform young. epithelioma of birds we have already referred to. Finally, as we pass down the animal scale, the gills of the fresh water perch, the common earth-worm, the garden snail and the familiar cockroach (Blatta orientalis) are all of them fertile fields for the demonstration of Protozoa.

These instances, together with innumerable others that might be cited, simply show the extent to which these lowly organisms participate in pathological as well as apparently non-pathological processes occurring in the various types of animal life.

In concluding, the writer once more begs to call attention to the fact that the foregoing demonstration of the cell-enclosures of cancer simply corroborates the results obtained by a number of pathologists during the past hemidecade. In no sense do they furnish indubitable evidence that the disease is dependent upon the presence of a parasite. Neither can there be said to exist even proof positive that these bodies are Protozoa. resemblance, however, of the anatomical details here presented, to those that illustrate the various phases in the life history of certain of these organisms, is certainly very striking. evidence is far from complete, and for the present we are simply justified in considering the whole matter as sub judice. In the face however, of the facts presented, we can certainly do no less than admit that the cells of carcinoma, in very many instances, present appearances that are wholly and entirely unexplainable by any reasoning based upon our present knowledge of pathological histology.

The writer wishes, in closing, to acknowledge his great indebtedness to Dr. M. C. White, Professor of Pathology in Yale University\*, for the advice and assistance so kindly and courteously given.

<sup>\*</sup>Reprinted from the Transactions of the American Microscopical Society.

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## PLATE I.

- Fig. 1. Cancer cells.
  - n. Nuclei.
  - s. Small round cells.
- Fig. 2. Cancer cell.

  Nucleus dividing.
- Fig. 3. Cancer cell.

  Two nuclei.
- Fig. 4. Cancer cells.

  Invaginated. n. Nuclei.
- Fig. 5. Cancer cells.

  Invaginated.
- Fig. 6. Cancer cells.

  Division after invagination.
- Fig. 7. Cancer cell.

  Hydrophic degeneration about nucleus (n).
- Fig. 8. Cancer cells.

  Invaginated cell; nucleus broken up.
- Fig. 9. Mast Zellen. (Methyl-blue.)

  Zeiss. Objective, 15. Oil immersion. Ocular, 4. C. W. K., Pinx.

# Plate L



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Fig. 4



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### PLATE II.

- Fig. 10. Cancer body or enclosure.

  From scirrhus of breast.

  \*\*n. Nucleus.
- Fig. 11. Cancer body or enclosure. (From another case.)
- Fig. 12. Two cancer bodies in one cell. (From scirrhus.)
- Fig. 13. Three cancer bodies.
  (From scirrhus of breast.)
- Fig. 14. Five cancer bodies involving two cells.

  From encephaloid of cerebullum.

  v. Vacuole.
- Fig. 15. A crowd of cancer bodies.

  From same specimen as Fig. 14.
- Fig. 16. Different type of enclosure. From encephaloid.
- Fig. 17. Different type of enclosure.

  From same growth as in Fig. 16.
- Fig. 18. Two enclosures involving two cells.

  From same growth as in Figs. 16 and 17.
  - Zeiss. Objective, 1. Oil immersion. Ocular, 4. C. W. K., Pinx.

# Plate II







Fig 10.

Fig II.

Fig 12







Fig 13.

Fig 14.

Fig 15.







Fig 17.



Fig 18.

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## PLATE III.

Fig. 19. Two cells.
(From scirrhus of breast.)

Fig. 20. One field. (From scirrhus.)

Fig. 21. Two cells.

(From scirrhus.)

n=Fragment of nucleus.

Fig. 22. Single cancer alveolus, showing three enclosures.

Fig. 23. Single cell.

Nucleus has disappeared.

(From secondary cancer of liver.)

Fig. 24. One field.

Enclosures and invaginated cell.

Fig. 25. Apparent division.

Nucleus displaced.

Fig. 26. One field. (From encephaloid.)

Fig. 27. Fuchsin bodies. (Russell.)

Fuchsin and iodine. (Green.)

Zeiss. Objective, 1. Oil immersion. Ocular, 4. C. W. K., Pinx.

# Plate III.



Fig 19.



Fig 20.



Fig 21.

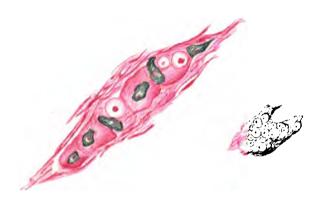


Fig. 22



Fig 23. Fig 24.



Fig 25



Fig. 26



Fig. 27.



# POTT'S DISEASE FOR THE GENERAL PRACTITIONER.\*

CHARLES A. TUTTLE, M.D.,
LECTURER IN ORTHOPEDIC SURGERY,
MEDICAL DEPARTMENT, YALE UNIVERSITY.

Pott's disease is a tuberculosis of the bodies of the vertebræ and contiguous structures. It is attended with the usual phenomena of tubercular processes and in addition others especially dependent upon the anatomical structure and physiological function of the spine. The term spondylitis, expressing in part the pathology, is more in accord with general surgical nomenclature.

Sir Percival Pott, from whom the disease is named, published in 1783, his classical work giving its first correct clinical picture, but the true pathology has been known only since Koch discovered the tubercle bacillus.

The dorsal region is the more common seat of this tubercular infiltration, but it may occur in other regions or at the junction of any two. It may be acute or chronic; may affect adjacent or distant vertebræ, and runs the course of tubercular osteitis in the epiphyses of the long bones. There must be present a predisposing and an exciting cause: hereditary tuberculosis, the one; vital depression from bad hygiene, syphilis and continued fevers, especially the examthemata, the other. These with trauma, often slight and unnoticed, completes the etiological history in most cases.

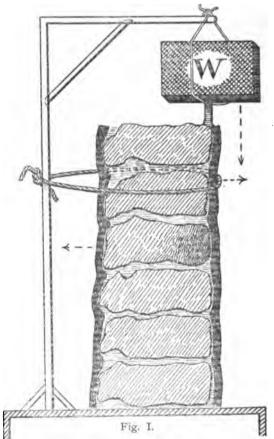
The back may be considered a flexible upright with a complex series of guy ropes (erector spinæ and post-thoracic muscles, ribs and other attachments) supporting a superincumbent weight. This weight is the head, shoulders and arms, and that part of the trunk above the disease. With the vertebræ, intervetebral discs and guy ropes normal the center of gravity is situated so that the weight is held in position. If one vertebral body is becoming infiltrated and carious it soon becomes unable to support the weight and gives way. A forward tilt of the spine above the lesion is then inevitable, and also a backward angular deformity.

I have prepared a diagrammatic representation of this condi-

<sup>\*</sup>Read before the New Haven Medical Association, December, 1896.

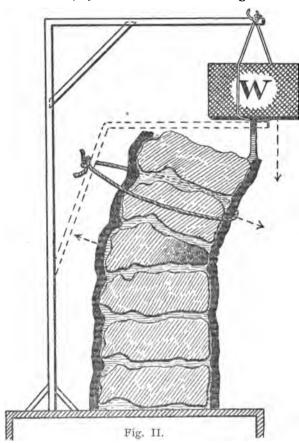
tion (Fig. I.). It represents a series of irregular bodies piled loosely but with sufficient lateral support to hold them and a weight above. Assuming that one of the blocks decay upon the anterior side and becomes incapable of supporting its part—but one result can follow, viz., a forward tilt of the portion above (Fig. II.). Whether this happens gradually or suddenly depends

upon the character and efficiency of the external supports. What will be the effect of such a bend? The most important is that, both pathologically and mechanically, upon the Mechanical cord. pressure from the calibre diminished of the canal may so pinch the cord as to interfere with the transmission of nervous impulses and hence a more or less complete paraplegia. This, however, is exceptional. In cases neglected or inefficiently treated a progressive motor paralysis up to the time of greatest deformity is the rule. The cord soon accommodates



itself to the changed condition; the angle in the anterior wall is rounded off by absorption or decay, and there is a complete recovery. This, however, is not the usual cause of paralysis. In most cases there is meningitis and myelitis ascending and descending opposite the seat of disease. These cause swelling and interference of function. The compression of nerve trunks in the intervertebral foramina furnish an inherent series of symptoms frequently treated independent of the cause. If dorsal they are below the exit, because of the distribution of the nerves, and are: intercostal neuralgia, interthoracic and intra-

abdominal pains, gastric and intestinal indigestion, irregular breathing, and interference with the free action of the trunk muscles and their atrophy. If *lumbar*, the effect is on the abdominal and pelvic viscera; constipation, flatulence, irritability of bladder and rectum, dysmenorrhæa and ovaralgia. If *cervical*, strangula-



tions, dysphagia, laryngeal irritation and torticollis.

Much depends in treatment and especially prognosis upon the early recognition of spondylitis. Some of the more important and striking early manifestations are given, viz:

First—Muscular rigidity. This is the one most constant, and often forms the chief reliance in diagnosis. In movements of the spine the erector-spinæ mus-

cles stand out on either side of the spinous processes and by their rigidity act as a check upon the movements, preventing largely irritating motion in and between the vertebræ. Second—The guarded character of all movements. In walking, bending, etc., the attitude is indicative of caution lest some jar be transmitted to the inflamed surfaces. The child picking his toy from the floor bends the knees and squats rather than bend the spine. Third—The peculiarity of the gait. The patient walks with extreme caution with knees bending and the spine rigid, and there is little up and down motion. Fourth—The transferring of pressure below the disease.

Unconsciously in search of every means to rest his spine he soon learns that his most comfortable attitude is with his shoulders and head supported either by hands or elbows on a fixed body or knees. This steadies the spine and transmits the weight. Children frequently walk about in this latter position. These with the attending constitutional derangement are the more important symptoms. If he added a slight abnormal projection of one or more spinous processes the diagnosis is complete.

Prognosis.—Up to Pott's time, 1783, the prognosis for attesting the disease was bad and the mortality high. He showed that with efficient mechanical means and judicious constitutional treatment not only could cases be modified or aborted but deformity corrected. Remember that in tubercular osteitis there is an actual loss of bone which cannot be replaced, but if the disease can be arrested before unsightly deformity has appeared it is a cure—from an orthopædic standpoint. It may, in very acute cases—particularly in the mid-dorsal region—be impossible to prevent the deformity increasing slightly whatever the treatment, and especially if it is incomplete, by either surgeon or parent. The inherent tendency is either toward fatality or exceptionally a spontaneous cure with great deformity. If properly cared for many lives, much suffering and extreme deformity may be saved.

To summarize let me present the clinical history of a typical case from my note book. Freddie J., age 8, brought for examination September 15th, 1896. Appearance, slim, delicate, badly nourished and anæmic. Mother accompanying shows apparent pulmonary tuberculosis. Child has brother, aged 12, perfectly One uncle and paternal grandfather died of consumption aged 30 and 28, respectively. Freddie complains of sharp abdominal pains, called colic; rheumatism of legs, called "growing pains"; both increased by jar and motion. Said to be stiff on getting out of bed or up from sitting. But this soon passes away. Examination undressed shows a peculiarity of gait, short steps and springing knees. Temp. 99.8 (2 P. M.), pulse 95, resp. 36, shallow and apparently painful; slight abnormal projection of 5th and 6th dorsal vertebræ with tenderness. Erectorspinæ muscles rigid and spine stiff; rests hands on knees. Treatment, jacket.

Treatment—The indications for treatment are evidently to fix and protect from injury and pressure the diseased portions until a cure is accomplished, and to aid this by such constitutional measures as experience has shown to be of value. The falling forward must be counteracted and the weight must be taken off.

There are two methods of meeting these indications, viz.: First—Recumbency, continued confinement in bed. Second—Suspension and fixation apparatus.

Both are of value. One should not be used to the exclusion of the other. To confine a child weeks and months in bed, away from sunlight and open air to the sacrifice of his general health, would be, because of other means, deplorable, while equally so would be the persistent use of heavy, harsh and excoriating ambulatory apparatus, when a few weeks prone brings rest, healed excoriations, and renewed vigor. It is my custom to confine patients for a few weeks to make observations and record of the vital signs, and until I can personally superintend the preparation of a suitable appliance.

The bed should be properly prepared—as hard as is consistent with a considerable degree of comfort. If of feathers or a spring bed the patient sinks in at the buttocks, the spine is thrown into a general kyphosis with additional pressure upon the diseased area, and a defeat of the whole object of treatment. An ordinary heavy hair-mattressed bed without springs is best and a small pillow under the back centered at the disease acts well. It furnishes a cushion to lie upon and so tends to straighten the spine as to lessen pressure between the vertebræ. Recumbency means flat down, either upon the back or face at all times. patient is never allowed to sit up, lie upon the side or lean forward. If necessary or advisable traction either to the head or legs or both may be applied and is often of much service in relieving pain and restlessness. This treatment alone or combined with other measures is especially serviceable in acute and rapidly progressive cases particularly in the high cervical and low lumbar. The tediousness of confinement passes off soon with children, but with adults it is irksome after a few days. Patients doing badly while about will often gain weight and spirits because of the relief afforded. It should be thorough and unrelenting if practiced at all, for the evils of confinement without the benefits of rest and relief from pressure might be That there is a judicious limit to its usefulness is serious. evident. Pott's is a tubercular disease and above most others is benefitted by fresh air and good hygiene. Hence long confinement is such a serious detriment to the general health that it must soon be superseded by or alternated with methods allowing free movement of the other parts and locomotion. Bradford and Lovett call attention to the fact that a tendency to tubercular meningitis is favored by too long confinement.

Therefore, apparatus must be devised not only to support

the spine but to allow locomotion with the least weight and hindrance. Many such have been used, all more or less efficient but with the same object—namely, relieving and transferring the superincumbent weight below the disease and arresting the tendency to tilt forward.

It would be best to transfer the weight to something outside of the body; e.g., the floor directly or indirectly, but this presupposes that the patient remains always in the same position or place.

The problem presented is an anatomico-mechanical one demanding careful study. The apparatus must meet at least these conditions—viz:

First—It must as far as possible prevent any movement between or near the diseased vertebræ.

Second—It must be light in weight so as not to be cumbersome and yet sufficiently heavy to have requisite stability.

Third—It must be adjustable so as to meet the varying conditions.

Fourth—It must be easily cleansed and renewed.

Fifth—It must be comparatively inexpensive as nearly all these patients are poor.

Sixth—It must be simple and easily removable.

Seventh—It must relieve the superincumbent weight and transfer the pressure below the disease.

There are two which experience has shown best meet the indications, viz.—the jacket of various materials, and the anteroposterior supporting brace as modified by Dr. N. M. Shaffer of New York. Adjustment of one of these will be efficient in all ordinary cases. Theoretically a misapprehension, practically the plaster jacket of Dr. L. A. Sayer meets most of the conditions where the lesion is between the fourth dorsal and third lumbar. But there are objections to it which have caused it to be abandoned in nearly all cases. These are:

First—It soon becomes loose and badly fitting, thus furnishes an inadequate support.

Second—It is hot and dirty unless removable and a place for the accumulation of food crumbs and vermin.

Third—It is heavy and closed, and often hides chafing and obstinate eczema.

But in certain exceptional cases of the poor, especially if lateral deviation is present, it is the most efficient means. To overcome these objections, jackets of various materials are made, e. g., wire netting, rubber, silicate of soda, paper, aluminum, etc., all

faulty in some particular. The material which I have found best adapted and have used in over thirty jackets is an oak-tan sole leather, easily procurable and moulded after wetting onto a shell-lac, cast of almost any shape. This dried and stiffened with smotheod and laced, furnishes a support of much comfort and little weight. To this may be added any of the head supporters.

The antero-posterior supporting brace may be used in place of the jacket. It is light and efficient but expensive and requires the patient or cast at the instrument maker's. It consists of two uprights one on either side of the spine about one and a half inches apart made of an especially prepared steel. These are inserted into a pelvic band, broad and strong, passing nearly or quite to the trochanters. At the angle of the scapulæ they are held together by a removable cross-piece of steel and also by a similar one just below the spines of the scapulæ. To the ends of the latter are fastened light bands passing well over the shoulders. It is fitted closely to the contour of the spine by bending the uprights and held by web straps from the shoulder pieces around under the axillæ to the steel pieces at the angle of the scapulæ and a series of web straps buckling to and around the uprights from an apron of cloth in front. The pelvic band also buckles to the apron, thus securing the apparatus firmly and accurately. This brace works upon the principle of the lever, the fulcrum at the disease point, the weight the hip band. The shoulders are pulled back until the intervertebral pressure is lessened or relief is experienced. It has reached its limit of efficiency when it makes the greatest pressure on the projection compatible with comfort and the integrity of the skin.

When the disease is in the cervical region or above the fourth dorsal, relieving weight by the axilla has little effect and other or additional means must be provided to carry the head. apparatuses are used. The weight of the head may be carried as indicated in the diagram, either from above as in the Sayer's Jury Mask or from below as by Shaffer's Chin Rest. various collars of wire, inflated rubber, gutta percha and plasterof-paris are of little value. You are familiar with the Sayer's Jury Mask. Shaffer's Chin Rest, which is efficient and less cumbersome, consists of an ovoid steel ring made to open at the side but secured when closed. It supports the chin in a rubber cup and reverts the pressure to upright at the occiput. It is attached to the brace or jacket by a steel upright with a ball and socket joint. The head is secured by a webbing about the forehead from the ends of the posterior uprights.

The utmost care is demanded in fitting all appliances. They

can easily be adjusted but not without a thought as to their indications. Chafing, often inevitable on tender skin, can be largely prevented by alcohol rubbing, and a bland powder, of which there is none better than the compound stearate of zinc.

The most serious complications of spondylitis are abscesses and paraplegia. A word for each. Abscesses occur in twenty per cent of all cases, they indicate complete and extensive destruction of bone. They are tuberculous in type, insidious in their approach and far reaching in effect. They are psoas, lumbar, iliac, or post-pharyngia, depending upon the location of the disease. As psoas, the most frequent, they originate in the dorsal region, ulcerate through the ligamentous surroundings and enter within the sheath of the psoas muscles. Influenced by gravity and least resistance they follow the sheath, infiltrate between the muscle fibre, pass through the pelvis and appear as a tumor at the upper and inner side of the thigh. This course is usually months in duration.

The treatment of tubercular abscesses has been a much-mooted question. Whether they shall be considered as applicable to the general rules of surgery and treated by active interference, or as a class by themselves, seems to be unsettled. Now with the more exact knowledge of their bacteriology and course, often ending in absorption—judicious expectancy with efficient mechanical appliances is the course usually advocated, and the results being obtained show the wisdom of the course.

The causes of paralysis have been suggested. It occurs in approximately twenty-five per cent of cases. As to treatment it is chiefly expectant. The medication is that of meningitis and compressive myelitis. Ergot, potassium bromide, potassium iodide, strychnine and physiotigma give but indifferent results. Applications to the spine, ice or hot water and counter-irritations, iodine, blisters and cautery, may be tried. It is best to put the patient to bed upon his back and hope for and expect an aborting of the progress and a hastening of convalescence.

Finally—the true object of treatment in Pott's disease is not the application of any particular surgeon's method or the use of any particular brace or jacket, but the employment of such means as are most efficient in carrying out the object aimed at. But in all cases there are indications from two to ten years for careful, judicious and unrelenting treatment.

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The last month in England has seen the American degree of M.D. brought into open disrepute. A claimant to that degree conferred by an eclectic school in Pennsylvania was prosecuted for practicing medicine illegally. Evidence was adduced showing that he had obtained the diploma by a cash payment, and that during the period which he claimed to have spent in study at this school, he had never left the United Kingdom. He was sentenced to twelve months at hard labor. The press in commenting upon the case called attention to the notoriety of these eclectic schools as institutions for the sale of fraudulent diplomas, one paper quoting the advertisement of a Wisconsin school which offered its diploma for no other qualification than \$35.

In spite of any possible inaccuracies in the report, this incident calls attention to practices which are, indeed, too common at home as well as abroad. Recent occurrences could be pointed to in this country, proving that all such diplomas are not exported; that there is still a large demand in the domestic trade for them.

In England the General Medical Council, a highly respected

body, assumes the responsibility of exposing and bringing similar offenders, in every part of the country to justice, the Council acting of course through the law. In the United States, on the other hand, such jurisdiction is left in the hands of each State, more strictly speaking, the State Medical Associations, who are expected to originate and support laws that have such distinct bearing on medicine and its welfare. And it would seem that in the present heterogeneous condition of the medical profession in this country, due in great part to its size and unequal development, the State associations very properly are responsible for such matters. They are in the closest touch with the profession of the region; understand the character of its people; have the best appreciation of professional rights and infringements, and, consequently, are best able to see iustice done.

But in the mere making of laws, enough has not been done by the profession, as many seem to think. The late incident in England proves this. Questionable diplomas, no matter where met with, should be put to the test by physician or surgeon, and, in case of fraud, the offender subjected to a severe penalty.

Only as our State Medical Associations throughout the United States live up to this trust reposed in them, can they hope to preserve their own respectability, or, what is of greater import, hold the respect and confidence of the public.

THE address of Dr. Mailhouse at the annual meeting of the New Haven City Medical Association contained a number of timely suggestions which are worthy of more than passing notice. And, without discussing the advisability of such measures as pertain only to the progress of the association, we will consider briefly some of the different recommendations which relate to the much more general subject of public health.

The city in which every ideal of public sanitation is exemplified does not exist. There are certain sources of disease bound to thrive in every community. In other words, a town's death-rate is determined by two sets of conditions, one of which is unchangeable from the very nature of things, while the other is determined very largely by the administration of municipal affairs and is directly controllable.

It is true that during the past ten or twenty years there has been a perceptible decrease in the death-rate in New Haven. But it can yet be lowered and while such a possibility remains constant vigilance should not be allowed to flag. The highest degree of public health is not at all compatible with such existing conditions as filthy streets, garbage nuisances, snow deposits on the Green, food and milk adulterations, crowded tenement houses, and the lack of a hospital for contagious diseases.

These are some of the evils referred to by Dr. Mailhouse. They are all inimical to public health, but they belong to the class which are, to an extent at least, preventible, and the death-rate will decrease in direct proportion to the precautions taken against such evils.

One does not marvel much at the laxity of laymen in regard to such matters when medical men are silent. And it is an unfortunate dispensation which decrees that the time and attention of the physicians shall be so proverbially and so unceasingly occupied in their particular line. The art of healing has taken so much of their time that that is regarded by some as their only sphere of usefulness, and is it to be wondered at if they have come to think so themselves?

Nevertheless, it is a much broader conception to regard them as the true guardians of the public health in every way, however general or remote. It is this conception, we think, which Dr. Mailhouse wished to emphasize in his remarks, and the prompt action of the Medical Association in giving the suggestions he offered a proper consideration impresses us as being most laudable.

\* \*

The successful practitioner is one who is not only capable of recognizing disease in all its manifestations but is also a deep student of the different psychical states of the one under his care and who bases his treatment upon a rational consideration of the idiosyncracies and characteristics of the patient. The psychical effect produced upon the patient in many instances plays as important a part as the physical in the treatment of disease. Therefore, in the management of patients the doctor should not fail to avail himself of every legitimate aid to gain the desired psychical effect, and there is none so important as the individuality and personality of the physician himself.

This subject is not new. Much has been said and written along these same lines. Recently a new impetus has been imparted to the discussion by articles in the medical press and we would add our voice to the march of progress. The physician who trusts entirely to his pharmacopæia will in many cases fail, no matter how perfect his knowledge of therapeutics. A

highly civilized people are affected largely by their psychical impressions, the American people exceptionally so.

This fact should be forever paramount in the mind of the practitioner of medicine. If a drug is administered by the physician with the impress of certainty of action, the course of the disease will often be governed and decided by this psychical effect. To accomplish this the physician should strive to obtain the complete confidence of his patient; he should avoid all appearance of hesitancy and uncertainty; he should be gentle, decisive, commanding, and present, moreover, a perfectly disciplined temper. The courage to break down the fetters of antediluvian opinions in regard to health or treatment with which the patient may be bound; the independence to act firmly as his scientific knowledge may dictate are characteristics too often lacking in the practitioner of the present time.

# MEDICAL PROGRESS.

Notes on the Treatment of Fæcal Fistulæ. - (Abstracted from the Medical Record of October 24, 1896.) At the thirteenth annual meeting of the New York State Medical Association. which was recently held in New York City, Dr. Frederick Holmes Wiggin of New York County, presented a paper with the above The chief cause of the occurrence of fæcal fistula was stated to be the delay in resorting to operative measures to which patients suffering from typhlænteritis or strangulated hernia were frequently subjected while their ailment was carefully diagnosticated. The view recently advanced by a writer on the subject under consideration, that the best treatment for this condition consisted in its prevention, was concurred in. But in the case in which this mishap had occurred, it was pointed out that if the opening was of small size, was located near or below the ileocæcal valve and no obstruction to the fæcal current existed. operative measures might be deferred, as in most instances the opening would close in a short time spontaneously. On the other hand, if the bowel opening was of large size, was situated laterally, or some distance above the ileo-cæcal valve, and was accompanied by the escape of a large proportion of the contents of the bowel, operative procedure for the closure of the opening should be speedily undertaken.

The histories of three cases successfully treated by surgical measures were cited. In two instances the patients were inmates

of the Hartford (Connecticut) Hospital, and were operated upon by Dr. Wiggin, by reason of an invitation which was extended to him by the medical board of that institution, after several previous unsuccessful efforts to close the bowel openings had been made. The occurrence of the fistulous opening was due in the first case to failure, and in the second case to delay in resorting to surgical treatment of typhlænteritis, from which disease both patients originally suffered. In the third case the bowel opening was caused either by the pressure of the gauze used to drain the abscess cavity, or by an ulcerative process which originated from within the gut. In the first case, as the opening in the bowel was of large size, irregular in shape, and the gut was thickened and friable, the diseased portion of bowel containing the opening, about four inches in length, was excised, and the divided ends joined by the suture method of Maunsell. In the second and third cases the bowel openings were situated in the head of the colon, and were in both instances closed by means of several rows of sutures, after which the omentum was drawn over the former site of the fistula, and retained in position by sutures.

In describing the technic employed the writer laid much stress upon the following points, viz., the thorough disinfection of the parts, including the interior of the bowel, with hydrozone, the closing of the intestinal opening, when possible, before the breaking up of the peritoneal adhesions, and the opening of the general cavity, the removal of any existing obstruction to the fæcal current, the disinfection of the bowel surface with a solution of hydrozone, before and after the placing of the sutures, the control of oozing from the cicatricial tissue by the same means and the closure by a single row of silk-worm gut sutures without drainage of the abdominal wound after the washing of the peritoneal cavity with saline solution, some of which is allowed to remain.

In concluding, the writer stated that ever since September, 1893, when he had proved the value of hydrogen dioxide as an effective antiseptic, which in proper solution did not unduly irritate the peritoneum, when followed by a six-tenths per cent. saline solution, he had had little reason to fear the danger of causing septic peritonitis from the accidental escape of pus or fæcal matter while operating, and that when this complication had occurred it had been invariably successfully met by the use of hydrogen dioxide in the manner described in the paper. He advised the excision of the diseased portion of the gut in those instances where it had become much thickened and friable, and expressed the belief that with a clearer understanding of the

objects to be obtained by operation—i. e., the restoration of the integrity of the intestinal canal, as well as the closure of the opening in the bowel—future operations for the cure of fæcal fistula would more frequently result successfully than they had in the past.

Swallowing of a Safety Pin.—(British Medical Journal, Nov. 7, 1896). Dr. Ayling, London, was summoned to see an infant of eight months who had swallowed a safety pin. Nothing could be done but exercise extreme vigilance in examining the excreta. The pin was voided exactly two months after, per anum, without pain or hemorrhage. The interesting features of the case were: (a) The pin was retained sixty-two days; (b) It was opened at an acute angle; (c) The absence of a single untoward symptom.

Thyroldin in Prurigo.—(Sem. Med., October 28, 1896). A series of therapeutic experiments has been made by A. Dokrowsky in the Pediatric Clinic of Professor A. Monti of Vienna, with thyroidin upon children subject to prurigo. Under the influence of the extract, itching remitted, the eczema-like papules and lesions caused by friction disappeared, and the physical condition rapidly improved. Cessation of the administration of the drug was marked by a relapse in from one to thirteen weeks. Upon renewing the treatment the symptoms again disappeared, indicating that thyroidin acts certainly in prurigo but is not radically curative.

CARCINOMA OF THE CERVIX IN A GIRL OF FOURTEEN .-- (New Orleans Med. and Surg. Jour., Dec., 1896). Dr. W. L. Little called upon the patient May 15, 1895. She was anæmic and was continually anorectus. Every month she suffered from headache, backache and physical and mental torpidness. The case was diagnosed as chlorosis. Appropriate treatment stimulated menstruation, subsequently followed by menorrhagia and dysmenorrhea. Later she had leucorrhea. An examination made him suspect cancer. A consultation confirmed this. Because of extensive adhesions involving the cervix uteri, vaginal walls and surrounding tissues, operation would have been ineffectual. Ultimately the tissues broke down from ulceration, the discharge became characteristic, and the rectal walls were involved. Conditions were aggravated until the death of the patient, October 23, 1896.

A Case of Infection by Vaccinia.—(Deutsche Med. Ztg., 1896, XVIII. 283). E. Kromenberg, a boy eight years old, had an

unvielding eczema at the entrance to the nostrils, due to adenoids. On the 18th of May, 1895, both nasal cavities were occluded by crusts. Lenticular vesicles with reddened bases covered the upper lip, which was greatly swollen. In the center of its border was an abraded area, evidently due to a ruptured The eruption spread over the right cheek to the right temporal region, implicating the eyelids, which were cedematous. The vesicles rupturing yielded a turbid yellow serum. The buccal cavity was invaded later, the mucous membranes of the tonsils, the hard and soft palates being congested. patient's general condition was but slightly disturbed. The history showed the eczematous skin began to redden after using a sponge to wash his face that had been used to bathe another recently vaccinated child. Inocculation of the father with the vesicular serum induced a typical vaccine eruption. The affection did not spread further. In a week the contents of the pustules had dried up and the illness had reached its end. were a few cicatrices which had the appearance of slight pockmarks. After the removal of the adenoids the eczema healed.

Eclampsia and the Milk Treatment.—(L'Obstetrique, November 15, 1896). Terré, after clinically discussing the treatment of puerperal convulsions, affirms the milk treatment to be most efficacious as a prophylactic method though other alarming symptoms, besides convulsions, may not be ameliorated by it. In a patient restricted for over a week to a milk diet he has never seen convulsions nor other symptoms of toxicity. The cessation of albuminuria does not of necessity follow. He declares he has never been able to determine an appreciable diminution of albumin, even after prolonged milk diet. The cedema also is unaffected. He insists that even though the albuminuria persist, if the milk diet be continued, labor will terminate without convulsions.

Sterilization of Ligatures (La Medicine Moderne, March 14, 1896). M. Letrop proposes a process applicable to all ligatures, catgut, silk, hair, etc. Many surgeons question the absolute sterility of the products of commerce and sterilize their own ligatures. Hence the reason for this method. To one hundred parts of distilled water are added five volumes of the formol of commerce with from forty to one hundred of formaldehyde. The threads to be sterilized are placed in a small flask in a glass which is completely filled with the solution until the mouth of the flask is immersed. This is covered with a filter paper mois-

tened in a solution of formolin to protect against atmospheric particles. The temperature should be from 12-18° C., the rapidity of sterilization by means of formol increasing with the temperature. After twenty-four hours the solution is replaced by alcohol to dissolve the formolin remaining in the sterilized threads. The alcohol used for lavage is then replaced by new alcohol in which the materials keep indefinitely. According to Vallum, the absorption of catgut so prepared, will not begin until after fifteen days.

# HOSPITAL AND CLINIC NOTES, ETC.

FERRATIN AS A CHALYBEATE.—In selecting the form of a chalybeate to be given to a patient, where iron is indicated, one often meets with annoying difficulties. Of recent years efforts have been made to produce a preparation of iron, as a medicinal agent, which shall have, as nearly as possible, the properties and characteristics which the ferruginous principle of the blood possesses as it exists in the human economy. Schmiedeberg of Strassburg first demonstrated the existence of an iron acid albuminate in our food, as it comes from the animal kingdom, analyses showing its presence normally in the livers of many animals. On these lines, therefore, the preparation, ferratin, which is an artificially prepared acid albuminate of iron, seems to be in many respects an ideal one, and a logical remedy to use, since it is given in almost exactly the form in which iron exists in the blood. As to its physical characteristics: its tastelessness and solubility go far in themselves to commend it, and these latter points make of it a happy agent for use in the anæmia of children. We had occasion some time ago to observe its effective action in the case of a child three years old who was suffering from subacute gastritis with attendant anæmia. the attack of gastritis had passed away it was essential to relieve the existing anæmia. With this in mind, several preparations of ferrum were employed successively, among them the tincture of the perchloride and the syrup of the iodide of iron. nately from a combination of the only natural mental irritability of the child and of the pathological irritability of the child's stomach, each of the preparations had in turn to be abandoned. Ferratin was suggested by a medical friend and was administered in powder in doses of two grains t. i. d., suspended in

milk. It worked very successfully, the child being ignorant of the administration of the drug owing to its tastelessness, and the stomach accepted it quite gracefully. Although the number of red blood corpuscles was not counted, still after a continued administration it was obvious from the better color and the increased functional activity of the child that the ferruginous constituent of the blood had been increased. It has been suggested that in the administration of ferratin to children and to women of fastidious tastes, that it be taken mixed with an equal amount of sugar and followed by a drink of milk or water as an assistance.

W. M. K., M.D.

Two Prominent Danish Surgeons.—Preëminent in Danish surgery to-day stand two names. Prof. Howitz and Dr. Thorkild Rovsing The former, a man somewhat more than three score years old, the latter a young man of half Prof. Howitz's years.

Prof. Howitz's specialty is Gynæcological Surgery. He was one of the first three surgeons in Europe to do ovariotomy, and this he attempted on account of his confidence in the principles which Lister was advocating. His previous success in major surgical operations had been remarkably good, owing no doubt to his belief in cleanliness and separation rather than segregation of his patients, and to his personal faith in green soap and hot water.

Prof. Howitz has performed eleven hundred laparotomies. In the last four years he has not lost a patient. This success he attributes to the perfection of his operating room, which he built in connection with one of the largest hospitals in Copenhagen, and to the cleanliness of his chief surgical nurse.

He operates at other hospitals in Copenhagen, and has an extensive consultation practice. Although no longer young he is an unusually steady operator, quick, unruffled by accidental complications, or by abnormal anatomical relations. His fame as a surgeon is well known throughout Germany and in some parts of our own country. He has recently built a Maternity Hospital in the most approved style of hospital architecture. The heating and ventilation are effected by means of hot pipes in the walls with openings from without. The polished floors, the bath rooms, and confinement room, are all as shining as possible, so that they offer poor lodging and breeding grounds for bacteria. As a model maternity hospital none could be found more perfect than this new building in Copenhagen.

Dr. Thorkild Rovsing has a well-earned reputation throughout Scandinavia, and to some extent in Germany, through his surgery of the urinary organs. He has already published a large monograph on "Inflammation of the Bladder," which was translated into German and had a remarkable sale; and another monograph, the first of a series on "Surgery of the Urinary Organs," which richly deserves to be translated into English and to have as wide a sale. He has also published dissertations on "Surgery of Tuberculous Joints in Children," a subject with which he is very familiar for the two reasons that he is surgeon to the Royal Children's Hospital and that Denmark is full of tuberculosis. He was one of the first to discover the non-germicidal action of iodoform, and to publish a series of experiments to prove his discovery.

Dr. Rovsing lectures at the Medical School of the University of Copenhagen, is Surgeon-in-Chief to three hospitals, and has a large surgical practice, which is rather remarkable when one considers that he is only thirty-four years old. His operating room at the Red Cross Hospital is new, and well equipped with all the modern conveniences for antisepsis.

Medical graduates who go abroad for study would find it very profitable to spend a month or more at Copenhagen, for it is one of the liveliest medical centers that can be found. Danish is not a difficult language, but most of the educated people talk either German or English and are especially cordial to Americans.

## KATE C. MEAD, M. D.

Tuberculous Joint.—On Monday, January 11th, a young girl came to the Surgical Clinic in the Dispensary whose condition would seem to question the expediency of resecting the tuberculous joints of children. She was nine years of age, and of Bohemian parentage. At the age of two, soon after walking had begun, a slight swelling at the right knee joint was noticed by her mother. Not long after the child commenced to limp and in various ways gave evidence of disturbance in the function of the joint. She was placed in bed and a permanent extension apparatus was applied, on suspicion of a tuberculous lesion. At the end of eight weeks the family moved to New York. There the little girl had apparently recovered from her lameness and the mother discontinued the extension treatment. In a few months, however, the trouble returned and this time progressed quite rapidly. It became so bad that she was taken to the New York Dispensary

for treatment. Here it was decided that the disease was beyond the control of the conservative treatment. The child was operated upon at three and a half years of age. A resection of the joint was made, and the patella and the upper portion (probably the epiphysis only) of the tibia removed. Recovery was prompt and there was no recurrence of the tuberculous disease. never, however, regained any use of the joint. In the course of a year the leg began to assume a curved shape, to correct which a second operation was performed. The deformity reappeared, No further treatment being given except a shoe to correct the shortening which had developed and a wire support extending to the thigh. Examination at the clinic showed: Right leg curved considerably outward and three inches shorter than the left. Right knee joint completely ankylosed; muscles of lower leg weaker than those on the left side, but in fairly good condition. Length of right tibia 10 1-2 inches, as compared to 11 1-2 inches in the left. Right fibula 13 inches; left fibula 12 3-4 inches. The cause of the deformity, therefore, is quite obvious. The right fibula had grown normally, while the upper portion of the right tibia had not grown at all. The result was a curving outward of the lower leg. The important point (brought out by Dr. Carmalt) is best put in the form of a question: "Is a surgeon in tuberculous joint justified in trying to save the lower portion of the leg of a child, or any person who has not attained his growth, if the operation destroys either tibial or fibular epiphysis?" Is it not best to amputate at the knee? A deformity is almost sure to follow, and this is going to be far more of a hindrance to the person than the loss of the lower leg.

C. L. K.

Dextrocardia.—At the medical clinic held in the Dispensary on January 11th Dr. Sperry exhibited to the class a patient having a case of dextrocardia. The position of the heart was entirely reversed from the normal, the apex beat being in exactly that position on the right side which it should have occupied upon the left. The liver was on the right side and could be felt in that region at the anterior part of the abdomen. It is probable that the other organs were likewise transposed, the spleen to the right, the pyloric orifice of the stomach to the left. This, however, is the rule in cases of dextrocardia. Except for this malformation the man has no ailment, and was simply introduced into the clinic to show the abnormality.

Training School for Nurses,—At the annual meeting of the Connecticut Training School for Nurses, held at the Nurses' Home January 13th, the following officers were President, Mrs. T. W. T. Curtis. Vice-Presidents, Mrs. T. D. Woolsey, New Haven; Mrs. H. Farnam. New Haven; Mrs. D. C. Sanford, New Milford; Mrs. Samuel Colt, Hartford; Mrs. G. M. Bartholomew, Hartford; Mrs. Edwin Harwood, New Haven; Mrs. J. F. Kingsbury, Treasurer, Mr. Robert I. Couch. Secretary, Miss Waterbury. E. Betts. Auditors, Mr. Arthur D. Osborne, Mr. Wilbur F. Day. Committee on Finance, Mr. Wilbur F. Day, Mr. Charles A. Sheldon, Mr. John B. Fitch. Executive Committee, Mrs. T. W. T. Curtis, chairman; Mrs. Francis Bacon, Mrs. Charles B. Richards, Mrs. E. M. Reed, Mrs. Emily Betts, Mrs. Lewis English, Mrs. G. R. Lovis, Mrs. E. L. Heermance, Mrs. C. S. Hastings, Mrs. A. McC. Matthewson, Mrs. G. B. Farnam, Mrs. Ellery C. Coolidge, Mrs. E. P. Morris, Mrs. Charles P. Clark, Mrs. Walter deF. Day, Mrs. William G. Mixter, Mrs. E. H. Jenkins, Moses C. White, William L. Bradley, M.D., Francis Bacon, Treasurer of Executive Committee, Miss G. R. Lovis. M.D. Committee on Examinations, Henry Fleischner, M.D., W. W. Hawkes, M.D., C. A. Tuttle, M.D. Superintendent of the School, Miss S. Henry; Assistant Superintendent, Miss Ada M. Stephens. Twenty-two pupils have graduated during the past There are now fifty pupils in the school; sixteen are ready to take outside private cases, or missionary cases; twentyfour are pursuing a course of systematic instruction in the hospital.

## ITEMS OF INTEREST.

The following statistics upon the subject of vaccination are published in the "English Royal Commission": In Sheffield 18,020 vaccinated and 736 unvaccinated persons lived in houses invaded by the disease. Of the former 75 per cent were attacked, and of the latter only 23 per cent. Taking only those cases in young children under ten years of age, of the vaccinated only 7.8 per cent were attacked, while the percentage in the unvaccinated was 86.9. Taking into consideration the fact that in those over ten years of age revaccination was probably not performed except in a few cases, the evidence in favor of vaccination as a protection against the disease is overwhelming.

Vaccination further was proved to have a remarkable effect upon the severity of the disease. In 1,298 vaccinated persons 82 per cent had the disease in its mild form and 17 per cent severely. In 443 unvaccinated patients 18 per cent had the disease mildly and 81 per cent severely.

The University of Pennsylvania has enrolled 968 medical students this year.

Wm. Churchill the present United States Consul-General at Samoa, is a Yale graduate of the class of '86. While at Yale he spent a considerable portion of his time following courses of the Medical School which he has found of inestimable value in his voyages about the Islands. He is to-day considered one of the best authorities upon the natives of the South Seas.

The New York Post-Graduate School celebrated its twelfth anniversary on January 5th. Several hundred guests were present on the occasion.

In a recent cholera outbreak in India the source of infection was eventually traced to clothes used for dish-wipers which became the resting place of the germ while being dried on the ground some thirty yards from a hut in which cases of cholera had existed a few weeks previously.

Manichon, in the Journal de Medicine, makes a strong plea for recognition of cancer as a hereditary disease. In twenty-three families which came under his observation there were sixty-nine cases. In eleven families it was transmitted exclusively in the male line; in five in the female, exclusively, and in the remaining seven in both. He also contends that the special form of cancer is hereditary.

The World Almanac gives the number of regular medical schools in this country as 113 with 18,660 students; the Homeopathic schools were 20 in number with 1,875 students.

The Health Board of the City of New York have given out a report upon the subject of tuberculosis which is of considerable interest. The report which was made public on the 12th of January recognizes the infectious nature of this disease and recommends the establishment of a hospital where cases of tuberculosis can be treated separately from other diseases.

During the first week in January a man was admitted to Bellevue Hospital, the official examiners in lunacy testifying to his insanity. A day or two after admission it turned out that he was

a reporter for one of the morning papers who had feigned insanity in order to write some sensational matter for his paper. He was set a liberty after a further examination. There is a limit beyond which journalistic enterprise ceases to be smartness, and it seems a pity that nothing can be done to deal with such a case of imposition.

The case is reported of a man named Alexander Waitzfelder, a faro dealer in New York, who in the course of his profession was accustomed to hold rolls of bills in his mouth while counting out money. Through an abrasion on his lips poison from the greenbacks entered his system, resulting in death.

In Baltimore eight boys were bitten by a mad dog on the 1st of December. All were sent to the Pasteur Institute in New York. Four of these have since died. One boy who died received treatment within forty-eight hours of the occurrence, but the fact that he was bitten upon the face and severely, does much to offset the early application of the treatment.

The Northern Provinces of India are in the midst of a terrible famine. In one district out of a population of 200,000 there have been 90,000 deaths.

The bubonic plague at Bombay continues without any sign of abatement. The authorities are experiencing great difficulty in making the natives conform to the sanitary regulations prescribed. The natives, whose mode of life is quite indescribable to an American, have gotten the fixed idea that the plague is a visitation of God sent upon the city for its sins. The seriousness of this view is at once apparent to all acquainted with the Hindoo belief in fatalism, and apathy on the part of the natives is the most formidable obstacle that the government and health authorities have to contend against. It is significant to notice that the November death-rate from this disease, which reached 63 per 1000 for the total population, is less than half of this for the more cleanly Eurasians, and only about 18 per 1000 in the Europeans. Cleanliness of living apparently being the worst foe to its spread. Up to January 15, out of 3,394 cases, there have been 2,356 deaths.

Surgeon-General Wyman of the Marine Hospital Service, on January 18 took action with reference to the bubonic plague which is so widespread in India, by issuing a circular letter, reimposing at all foreign ports and places infected or suspected of being infected with plague, the United States quarantine regulations of 1894 relating to cholera. Passengers and crews who have been exposed to infection are to be detained a period of not less than fifteen days from the last possible exposure.

### PRACTITIONERS REGISTERED MONTH ENDING JANUARY 16.

| Name.              |                        | School.     |              | Residence.                |
|--------------------|------------------------|-------------|--------------|---------------------------|
| Charles G. Child.  | Med. Dept. Yale Univ., |             |              | Montelair, N. J.          |
| Joseph B. Bissell, | Coll.                  | of Phys. a  | and Surg., N | Y., Salisbury.            |
| Harry G. Anderson, | 44                     | "           |              | Waterbury.                |
| Wm. S. Rioch,      | 4.6                    | **          | 4.6          | Hartford.                 |
| Perry S. Boynton,  | Univ                   | . City of I | lew York,    | New York.                 |
| Warren W. Foster,  | Harv                   | ard Medic   | cal School,  | Putnam.                   |
| Henry H. Smith,    | Jeffe                  | rson Med.   | Coll., Pa.,  | Hamden.                   |
| D. leRoy Culver,   | Univ                   | of New      | York,        | Blackwell's Island, N. Y. |
| Herman S. Spear,   | Dart                   | mouth Me    | d. Coll.,    | Bridgewater, Mass.        |
| James B. Moore,    | Univ                   | . City of I | ۱. Y.,       | New York.                 |
| T. Passmore Berens | Univ                   | of Penn.    | ,            | New York.                 |

### MEDICAL SOCIETY REPORTS.

NEW HAVEN CITY MEDICAL ASSOCIATION.—The annual meeting of this Association was held Wednesday evening, January 6, at the home of Dr. Francis Bacon, President Mailhouse presiding. The report of the Prudential Committee was read by Dr. Beckwith and that of the Finance Committee by Dr. C. A. Lindsley. As secretary and treasurer, Dr. Townsend reported a present enrollment of seventy-two members. During the year there were ten new members added, five deaths and one member There were ten regular meetings in 1896, the average attendance at which was twenty-four. The election of officers for the ensuing year resulted in the choice of the following gen-President, Dr. Townsend; first vice-president, Dr. O'Connor; second vice-president, Dr. Lambert; secretary and treasurer, Dr. McDonnell; prudential committee, Drs. Beckwith and Francis Bacon; finance committee, Drs. C. A. Lindsley and Fleischner.

The business of the evening being completed, Dr. Mailhouse, as retiring president, gave an able address in which he outlined the history of the association, dwelling especially upon its present needs. Among the more urgent of the needs of the association, which Dr. Mailhouse mentioned, were: a spirit of scientific progress, an extensive library, and it was recommended that the association as a body take more active measures in regard to public health. In speaking of the need of a library, Dr. Mailhouse explained that this would create the need of a home and men-

tioned the possibility that permanent quarters might be obtained in the new building contemplated by the Chamber of Commerce. A vote of appreciation was tendered Dr. Mailhouse by the society for his address, and that it be inscribed on its records, and a committee was appointed to report on the recommendation of the The meeting was then adjourned and a collation merved.

HARTFORD CITY MEDICAL Association.—On January 4th the annual meeting of the Hartford Medical Society was held, upon the invitation of Dr. G. W. Russell, in accordance with the custom of many years, at his house. The following officers were elected: President, Dr. M. Storrs; Vice-President, Dr. G. P. Davis; Secretary, Dr G C. Segur; Treasurer, Dr. C. D. Alton; I theartan, Dr. E. K. Root; Censors, Drs. Bacon, Ingalls and Sumpson; Executive Committee, Drs. Segur, Alton and E. K. Root, Trustee, Dr. Russell, Storrs and Shepherd; Building Committee, Des Russell, Storra Davis and Shepherd.

The Building Committee exhibited plans for the Hunt Momen at Burding, and reported that they hoped to be able to begin bodd grassion as the sasin would allow. After the transaction of his rest the usual social exercises took place, me to be the new of the least our, and at intervals, singone in the property of the Rossell extensions the society with No record Noward to and No words of commed and good cheer ALL COMMITTER AND THE ARTHUR STREET OF ACCORDING かいくく さんり マイナ さないか たい はい はな を上げる 名はます。

### ALL WILLIAMS SCHOOL NOTES

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Distribution of Chlorine in Connecticut," before the Chemical Club January 29th.

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- 1880. Jay W. Seaver, M.D., has an interesting article on nicotine in the February *Arena*. It shows the effects of tobacco on young men as compiled from statistics of the students at Yale.
- 1891. Clarence E. Spencer, M.D., had an article on asepsis and antisepsis in child-birth and puerperium in a recent number of the New York *Medical Journal*.
- 1891. Dr. Clarence E. Skinner and Miss Edith H. Hotchkiss, both of this city, were married in Plymouth Church December 31st.
- 1893. John A. Hartwell, M.D., has completed his term of service in the New York Hospital and has opened an office at 24 East Fifty-fourth street, New York City.
- 1895. Vertner Kenerson, M.D., has recently opened an office at 189 Allen street, Buffalo, N. Y.
- Ex.-1895. Arthur S. Brackett, M.D., has been appointed one of the town physicians at Bristol, Conn., where he recently opened an office.
- 1897. The engagement of Ernest D. Chipman to Miss Laura M. Deming of New Haven has been announced.
- 1898. J. Stirling Loomis recently spent two weeks as assistant in the surgical clinic at Bellevue Hospital, New York City.
- 1899. A. S. England, who has been ill several weeks with a severe attack of gastritis, has returned to college.
- 1900. Thomas B. McIntire, formerly a student in this school, and later of Amherst College, has returned as a member of 1900.

### BOOK REVIEWS.

A Practical Treatise on Materia Medica and Therapeutics. Ninth edition. By Roberts Bartholow, M.A., M.D., LL.D., Professor Emeritus of Materia Medica in the Jefferson Medical College of Philadelphia. Published by D. Appleton & Co., New York.

In preparing the ninth edition of this work on materia medica, which has long had a place among our text books, the author has found it necessary to enlarge it by some forty-six pages. Much of this new material consists of a description,

more or less complete, of some of the new synthetical preparations, which, although they are proprietary, the formulæ being either secret or protected by letters patent, have been proven of some value as therapeutic agents. The author has carefully selected from the list of the newest preparations only those which, it has been demonstrated, are worthy of a place in our materia medica. These medicaments do not appear in the official list of the United States Pharmacopia, but the author has recognized the necessity of including a description of them in any modern text book on materia medica.

Aside from the additions already noted this edition contains little material which did not appear in the edition of three years ago. We predict for it success equal to that with which former editions have met.

### YALE MEDICAL JOURNAL

Vol. III

MARCH, 1897

No. 5

RECENT DISCOVERIES CONCERNING THE PHYSIOLOGICAL BEHAVIOR OF DIFFERENT SUGARS.

GRAHAM LUSK.

About eight years ago the writer visited Oscar Loew in his Munich laboratory and found him busy in the manufacture of formose, a sweet tasting substance which had been prepared by passing vapor of methyl alcohol over an ignited platinum spiral. Loew had continued the process for upwards of three months, night and day, and was in despair that the substance so obtained, although apparently a sugar, could not be brought to crystallize. Since this time the product has been purified by a process devised by Emil Fischer, and has been shown to consist of levulose. The last few years have greatly increased our knowledge of the sugars, both from a purely chemical and a physiological standpoint.

We may divide the carbohydrates into three great groups—first, the monosaccharides, such as dextrose, levulose, and galactose, all of which have the formula C<sub>6</sub> H<sub>19</sub> O<sub>6</sub>; second, the disaccharides, such as cane-sugar, milk-sugar, and maltose, which have the formula C<sub>19</sub> H<sub>29</sub> O<sub>11</sub>, and which on boiling with acids are each resolved into two molecules of monosaccharides—viz: the cane sugar into a mixture of dextrose and levulose, the milk-sugar into dextrose and galactose, and the maltose into dextrose alone. The third group is made up of the polysaccharides or starches, containing an unknown multiple of carbohydrate radicles, and represented by the formula (C<sub>6</sub> H<sub>10</sub> O<sub>6</sub>)<sub>n</sub>. These polysaccharides break up by hydrolysis into the simpler sugars, by boiling with acids or through the action of digestive fer-

ments. Starch with acid yields dextrose, inulin yields levulose. Starch with digestive ferments ultimately breaks down into maltose and then dextrose, and glycogen yields the same products.

Recent work by F. Voit\* has lifted the veil from some of the hidden physiological problems regarding the behavior of various sugars with the organism. F. Voit was experimenting upon the feasibility of artificial nourishment in man, by subcutaneous injection. In each case he injected a sugar solution the strength of which was 10%. The urine was examined for sugar, and from the quantity present the amount of sugar burned could be deduced. The results with the monosaccharides are thus tabulated:

| Injected.  |               | Found in the Unine. |  |  |
|------------|---------------|---------------------|--|--|
| Dextrose,  | 100.00 grams. | 2.64 grams.         |  |  |
|            | 60.00         | Traces.             |  |  |
|            | 11.24         |                     |  |  |
| Levulose,  | 10.94         | 0.99                |  |  |
|            | 10.13         | Traces.             |  |  |
| Galactose, | 9.23          | 0.16                |  |  |
|            | 9.58          | Traces.             |  |  |

The above table very clearly shows that in man dextrose, levulose and galactose are readily burned within the tissues even when introduced into the blood current without having passed through the intestinal canal. Quite remarkable results followed the subcutaneous injection of the disaccharides, cane-sugar and milk-sugar, which were eliminated gram for gram in the urine. Maltose on the contrary was completely destroyed. The table given by F. Voit is as follows:

| Інјесте                  | D.            | FOUND IN THE URINE. |  |  |
|--------------------------|---------------|---------------------|--|--|
| Cane-Sugar, 25.60 grams. |               | 24.88 grams,        |  |  |
| 10                       | .81           | 10.71               |  |  |
| ç                        | ). <b>2</b> 9 | 9-95                |  |  |
| 1                        | . 27          | 1.23                |  |  |
| Milk-Sugar,              | .36           | 10.06               |  |  |
| 9                        | .05           | 9.42                |  |  |
| 1                        | .09           | 1.03                |  |  |
| Maltose,                 | 3.79          |                     |  |  |

That maltose would be destroyed was to be expected. It is known that blood has the power of transforming it into dextrose, perhaps through the hypothetical ferment glucase of Hamburger.

<sup>\*</sup>Über das Verhalten einiger Zuckerarten im thierischen Organismus. Münchener med. Wochenschr., 1896. Bd. 43, p. 887.

That cane-sugar and milk-sugar could not be burned in the organism but like other foreign bodies were eliminated in the urine, was a discovery of marked interest. If cane-sugar and milk-sugar be fed through the mouth large quantities must be taken, as much as five hundred grams, before a few grams of the corresponding sugar are to be detected in the urine. Hence, the sugar must be converted within the tractus intestinalis into sugars which may readily be burned in the body.

Several years ago the writer\* fed thirty grams of cane-sugar to a starving rabbit through a stomach sound. Six hours and a half afterwards the rabbit was killed and the stomach was found to contain 0.269 grams of cane-sugar and 2.356 grams of dextrose and levulose; the small intestine contained only traces of sugar; the large intestine 0.1 grams of dextrose and levulose, and the cæcum 2.167 grams of dextrose and levulose. An appreciable quantity of cane-sugar was therefore only found within the stomach. Similar results had been found by Seegen.

Regarding the inversion within the intestinal canal it is certain that the effect is produced by an inverting enzyme, invertin, contained in the succus entericus, an enzyme shown by Miura to be present in the intestinal mucosa of a still-born infant before any possible contamination with bacteria. The inversion in the stomach may be produced by the action of the hydrochloric acid. Prof. Voit has shown for many years on his lecture table that a 0.3% solution of hydrochloric acid at the body's temperature rapidly causes the inversion of cane-sugar, as is evidenced by the appearance of the power to reduce the copper of Fehling's solution. Experiments of Mr. S. J. Ferris done recently in my own laboratory show that while a o.1% hydrochloric acid at 38° C. has no inverting action on a 1% solution of cane-sugar, a o.2% acid will invert in one hour 14% of a cane-sugar solution containing 0.95 grams of cane-sugar per 100 cc., and a 0.3% acid will invert 33.8% of the sugar in the same time. Mr. Ferris has not only shown that the free mineral acid has the power of inversion to a considerable degree, but also that the acid in its loose combination with proteid exerts a similar influence. demonstrate this, white of egg was digested with pepsin and the 0.3% solution of hydrochloric acid until the reaction, while acid to litmus, no longer gave the tropæolin test. The acid here was therefore not free, but combined with the original proteid and with its various cleavage products, proteoses, peptones and It was found that such a solution did in one experi-

<sup>\*</sup>See C. Voit, Zeitschr. f. Biol., 1891. Bd. 28, p. 269.

ment convert 23.6% of the cane-sugar present, in another 15.3% of the cane-sugar, into invert sugar, in one hour. The details are to be published in another place. Enough has been said to indicate that the acid reaction of the stomach is sufficient to produce such inversion of cane-sugar as takes place within it. The fact that in Seegen's work and in my own experiment cited above, cane-sugar was found only in the stomach, would seem to indicate that the enzyme of the intestine has a more effective inverting action than the gastric juice. The saliva has no action upon cane-sugar. Whether the gastric juice contains an inverting enzyme is not known. The factor of hydrochloric acid, as already explained, is sufficient to account completely for the inversion of cane-sugar into dextrose and levulose, which are readily absorbed and destroyed within the cells and tissues of the body.

Regarding the behavior of milk-sugar there have been many differences of opinion. My own work has shown there is no inversion of milk-sugar into dextrose and galactose in the intestinal canal of rabbits. This was later affirmed by Pregl regarding the intestinal juice of sheep, and by Mendel concerning the paralytic intestinal juice of dogs. If, however, the intestinal mucosa, especially that of young animals, be brought in contact with a solution of milk-sugar the inversion takes place (Pautz and Vogel, Röhmann and Lappe, E. Fischer and Niebel). The inversion is therefore induced within the intestinal mucosa. Somewhat of a parallel is to be found in the fact that the amylolytic action of the mucosa is far more intense in converting starch into sugar than is the process within the lumen of the intestine itself.

After feeding milk-sugar to dogs the amount of glycogen in the liver may be largely increased (Kausch and Socin, Cremer), showing the dehydration of the dextrose and perhaps of the galactose to form the glycogen. Also feeding milk-sugar raises the amount of dextrose in the urine in total pancreas diabetes (Minkowski), and the same has been shown by the writer to be true in the case of total phlorhizin diabetes.

We have here then accumulated evidence regarding the fate of milk-sugar. Before absorption into the blood it is decomposed probably by the cells within the intestinal mucosa into a mixture of dextrose and galactose, which may be burned by the organism. As F. Voit points out, the milk-sugar present in the urine during the last days of pregnancy and the first days of lactation, must be quantitatively that amount which reaches the blood from the lactic glands.

Reviewing the behavior of the ingested carbohydrates we find that the polysaccharides and the disaccharides are all converted into simple monosaccharides in the body, milk-sugar being transformed into dextrose and galactose, cane-sugar into dextrose and levulose, maltose (the sugar derived from starch) into dextrose. Perhaps maltose is burned directly, but very probably such of it as may be absorbed is first converted into dextrose by the ferments in the blood. We see, therefore, that carbohydrates used as articles of diet are all partly, and in the case of starch very likely wholly, converted into dextrose. Further, levulose may in part be converted into glycogen within the body, and the same is probably true of galactose (Kausch and Socin), and this glycogen in turn may be converted into dextrose and fed to the blood. All this is not strange since dextrose is the normal sugar of the blood. It has its source in the ingested carbohydrates and likewise arises from proteid decomposition (through a glycogen stage) in the proportion of 45 grams of dextrose from every 100 grams of proteid decomposed.

The great interest in the knowledge of the carbohydrates lies in their supreme agency as an energy evolving source in the organism. If we take as an example the well-known diet arranged by Voit for the nourishment of an average working man, we may calculate as follows in terms of calories, the energy liberated in its physiological combustion:

|                | Grams. | Calories, |
|----------------|--------|-----------|
| Proteid,       | 118    | 483,800   |
| Fat,           | 56     | 520,800   |
| Carbohydrates, | 500    | 2,050,000 |
| Total,         |        | 3,054,600 |

But in the metabolism of proteid 45% of the proteid molecule is broken off as dextrose, so that the sugar arising from proteid also represents a heat value of about 200,000 calories. Hence in an average laborer 2,250,000 calories' out of a total of 3,054,600 liberated in the body may be derived from carbohydrates. In other words, seventy-three per cent of the total available energy in this particular food has its source in the oxidation of carbohydrates.

Schumburg has recently shown after hard exercise where presumably the store of sugar in the blood has been decreased in furnishing the energy for muscular work, that eating thirty grams of sugar results in increased muscular power.

Quite the reverse picture is presented in the case of a starv-

The starvation itself is not sufficient to proing diabetic dog. duce the effect to be recited, as it is well known that dogs are trained for the hunt by a few days of starvation. Work has been done by Mr. F. H. Reilly in my laboratory upon a starving dog suffering from "total phlorhizin diabetes," where the sugar as formed is rapidly excreted, and Mr. Reilly has shown that after five days of treatment (during which time only a small amount of gelatine on the fourth day was given) there was a very complete loss of muscular strength. An extract from Mr. Reilly's note-book at the end of the fifth day reads: "This morning the dog is very weak, wags her tail, recognizes us, but makes no effort to lift her head and appears almost lifeless. Temperature normal." In this case the energy furnished by the decomposing fat and the non-sugar part of the proteid was sufficient to maintain the bodily heat, the respiratory movements, and the beating of the heart, but insufficient to afford power for the muscles of locomotion.

Such examples bring vividly before us the value of the carbohydrates as food stuffs.

### 'FALLING OF THE HAIR.

R. A. McDonnell, M.D., New Haven, Conn.

Some bald-headed philosophers have gravely asserted that hair is gradually disappearing from the human race, and that this fact is due to an advancing civilization. Be this as it may, most people desire to retain at least a fair covering for the scalp as long as possible, and the purpose of the present paper is to consider how this desire may be gratified.

The causes which produce early falling of the hair are varied, some being avoidable or removable, others for the most part not. Given in the order of their probable importance, they would be arranged somewhat as follows:

Causes of Falling of the Hair.

I. Dandruff.

I. Pityriasis Rubra.

I. Dandruff.

I. D

In the foregoing scheme dandruff is assigned the post of honor as being the most fertile source of alopecia, and when it is considered how many pathological conditions are called by this name it is small wonder that it should stand at the head. But even if we exclude from this title all diseases but seborrhoea sicca and eczema seborrhoicum, dandruff would still be far and away the most common cause, and it is with this limitation that the term dandruff is henceforth used.

An easy deduction, then, is that every person who suffers from dandruff should get rid of it, if he wishes to preserve his hair as long as possible. This may be accomplished in various ways, but the most satisfactory method known to the writer is as follows: The dandruff is at first loosened by vigorous brushing with a rather stiff brush, and then a shampoo is ordered, for example:

 $\mathbf{R}$ 

| Resorcini,       |   | . 5.0    |
|------------------|---|----------|
| Alcoholis,       | • | )        |
| Saponis Viridis, | • | āā 25. o |
| Aquæ Rosæ,       | • | aa 25. 0 |
| Aquæ, .          | • | J        |

M.

A small quantity of the above solution is well rubbed into the hair and scalp with the hand; next a large bath sponge saturated with hot water may be squeezed over the head until just enough water has been added to make a thick lather with the aid of vigorous rubbing. This lather is to be worked into the scalp with the fingers until all vestige of scales is removed, and then thoroughly rinsed off with hot water. Several hot towels should now be in readiness to dry the hair, and women who are accustomed to sit after a shampoo for several hours with the hair hanging over a radiator to dry are astonished at the quickness with which it may be dried by hot towels.

After the scalp has been thoroughly cleansed by the shampoo the following prescription is written:

Ŗ

| Acidi Salicylici, .    |   |   | 1.0   |
|------------------------|---|---|-------|
| Sulphuris Præcipitati, | • |   | 2. 5  |
| Unguenti Aquæ Rosae,   | • | • | 25. 0 |

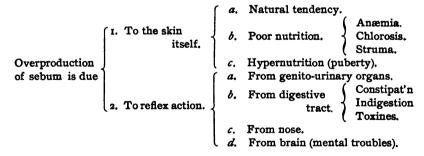
M.

The patient is directed to part the hair and then to rub in a small portion of the ointment along the part, working it well into the scalp at the roots of the hairs. Then another part is made parallel to the first and more ointment rubbed in. Thus a series of first longitudinal and then transverse parts are made, until the whole scalp has been well anointed. Done in this way, it is not necessary to smear up the whole shaft of the hair, but only to reach the hair roots and the sebaceous glands, where the

trouble is located. This process is thoroughly performed for six successive nights, and the seventh night another shampoo is taken. The eighth night the inunctions are commenced again, and this program is continued for three weeks. In almost every case the production of dandruff is checked completely after three weeks' treatment, and the hair, which may have been falling out rapidly before, begins to take firmer root. To be sure, many hairs which are on the point of falling when treatment is begun will fall anyway, and it may even seem for a time as if the treatment were increasing the hair fall, on account of the mechanical dislodgement of such hairs; but this need never alarm one.

After three weeks of such treatment the shampoo may be taken less frequently, say once in a fortnight. Yet when one thinks of it, there seems every reason why the scalp, which offers such an easy lodgment for dust and dirt of all kinds, and which itself is casting off effete products surely as rapidly as the rest of the body, should be washed at least as often as the other parts of the body.

By such treatment, then, we have removed all dandruff, and by the reducing action of the sulphur on the sebaceous glands, have checked its further production for a time. But as was shown in this journal in a recent paper on acne, seborrhœa is ultimately due to some one or more of a variety of causes, as follows:



It need only be remarked here, that the most complete success in treatment can only be attained by reaching and removing the ultimate cause of the seborrhæa, and that by far the most frequent of such causes is constipation, or some other gastro-intestinal derangement.

Next to dandruff perhaps the most common cause of early loss of hair is heredity. In some families, all the male members, or all who resemble one particular ancestor, lose their hair early.

Dark haired families and races as a rule become bald earlier than those with light hair. At first thought it would seem as though nothing could be done to prevent premature baldness when heredity is the cause, but this is a mistake. Careful hygiene of the scalp (which will be considered later) will often counterbalance hereditary predisposition for a number of years, and even after the hair has actually begun to fall proper stimulation will, to a certain extent, and for a limited time, often restore to the hair its pristine thickness and strength. Any of the rubefacients may be prescribed for this purpose for daily use, such as Croton oil 1½%, Tincture of Cantharides 5%, Oil of Cinnamon 10%, Tincture of Capsicum 5%, Oil of Mustard 1%, or any one of a dozen others. Tincture of Capsicum is one of the best, and for a routine prescription the following has served me well:

| $\mathbf{R}$ |               |            |   |   |        |
|--------------|---------------|------------|---|---|--------|
| <b>-</b>     |               | •          |   |   |        |
|              | Tincturæ Cap  | sici, .    | • |   | 5. 0   |
|              | Tincturæ Nuc  | is Vomicæ, | • | • | 7. 5   |
|              | Olei Ricini,  |            |   | • | I. O   |
|              | Olei Geranii, | guttas ii  |   |   |        |
|              | Aquæ Rosæ,    | q. s. ad.  |   |   | 100, 0 |
| M.           | _             | -          |   |   |        |

It is recommended that the stimulant be changed from time to time, so as not to rely upon any one to the exclusion of the others. Jaborandi, oxygen gas, quinine and other agents have enjoyed a great reputation as hair producers for a time, and then taken their proper position as aids, but not specifics, in restoring the hair.

It is a well-known fact that after many fevers, especially those accompanied by great depression, such as pneumonia, typhoid, puerperal or scarlet fever, the hair is very liable to fall out during convalescence. This is brought about in a variety of ways: In scarlatina, the hair papilla shares in the general desquamation; in typhoid and the other fevers, the baldness may be the result either of the excessive seborrhæa which often accompanies these diseases, or may be caused by the general lowering of nutrition of the body. Unless the hairfall be accompanied by considerable dandruff (in which case the above recommended treatment should be vigorously employed) the ordinary hygiene of the scalp will result in a restoration of the hair in most cases; but the employment of moderate local stimulation, with the use of good general tonics, will hasten this end. It seems to me unwise to cut the hair of ladies short in these

cases, because the baldness is practically never complete, and a certain proportion of the hairs will retain firm root. These may be augmented by a switch made of the hair which has fallen out, until the new hairs shall have grown long enough to do up well. In this way, all of that oftentimes most annoying shorthair period is avoided.

When improper hygiene is given as a frequent cause of falling of the hair it is with a due appreciation of the fact that savage tribes which devote little or no time to the care of the scalp are often characterized by a most bushy growth of hair even to advanced old age. This means only that they have made up in some directions for their lack of care in others. in the open air, conducive to a proper performance of all functions and to a general vigor of the system, as well as free venti-. lation for the scalp and an avoidance of pernicious modes of dressing the hair, are some of the reasons why a good head of hair is preserved under such conditions. In the care of the scalp there are sins of omission quite as flagrant as sins of commission. There are many otherwise cleanly people who never wash the head oftener than once in two or three months. while it is impossible, on account of the variability in the oiliness or dryness of the scalps of different individuals, to make a definite rule for taking shampoos, it may be said in general that they should be taken often enough to keep the scalp clean. the individual be employed in a dusty place, or if he perspire freely, or if his hair be naturally very oily, it may be necessary to wash the head every day or two. If the scalp is inclined to be dry, and the hair lustreless and fluffy, once in two or three weeks may be sufficient. In the case of the oily scalp, a strongly alkaline soap should be used, while the individual with fluffy hair will be most benefitted by a neutral or superfatted soap, with the addition of a small amount of some emollient pomade to be rubbed into the scalp after the shampoo. Some of these individuals with dry and fluffy hair have great trouble in combing it, because it seems almost impossible, without wetting the hair, to part it properly. Yet the practice of wetting the hair several times a day and allowing it to dry slowly is certainly pernicious. It is a well-known fact that the hands of fishermen. carriage washers, bar-tenders and others, whose occupation requires their frequent wetting, are generally covered with a harsh, dry skin, if not actually affected with eczema. A similar effect is noticed on the hair of those who frequently wet it; for in time it is apt to become dry and brittle, to lose its lustre, and

to fall out. It is much better in such cases to from time to time anoint the scalp with a small quantity of a bland pomade, such as freshly made cold cream, or vaseline, and to endeavor to stimulate the natural flow of sebum by persistent brushing.

The barber often advises people who are anxious about their hair to have it singed, and thereby seal up the ends so that the juices may not escape; as though the hair were a hollow tube connected with some fountain below. This is based on a fallacy, since the hair is not hollow and there are no fluids coursing through it. Singeing the hair is probably no better and no worse than cutting it, as it simply amounts to the removal of so much epidermal structure.

An excellent method of stimulating the growth of hair is by systematic brushing. It is a matter of importance that the brush be made of bristles flexible enough to bend before they would scratch the scalp. With such a brush it is both a pleasant and a useful exercise to brush the hair for several minutes each night, first in one direction, then in another, thereby stimulating a flow of blood to the surface and improving the nutrition of the hair. A very common cause of falling of the hair is long-continued reading under a hot lamp. Reflectors are often so constructed as to direct heat rays as well as light rays upon both the book and the head of the person who is reading. Oftentimes real disease of the scalp is so produced (dermatitis, eczema, seborrhœa), and the falling of the hair may be consequent on such disease or may not be preceded by any visible change in the scalp. This baneful influence of dry heat on the hair is probably a most important cause of baldness in scholarly men; but it helps to produce the same result in another class—those who play poker and pool night after night until far into the morning. One often hears of early dissipation being the cause of the baldness, but it is commonly supposed that this result is produced by the lowering in general vitality of the body. is not so, for consumptives are as a rule possessed of great heads of hair, and it is a well-known fact that hair grows very considerably after death, showing that the general vitality has but little to do with it.

The barber is responsible for no small amount of baldness, from his invariable habit (unless requested otherwise) of rubbing in pomades of one kind or another after cutting the hair. These pomades are not infrequently rancid, though the rancidity is veiled by the scent employed in their manufacture, and from the time of their application until their removal at the

next shampoo they are irritating the scalp. If pomades are needed (and they are not required by everyone), they should invariably be bland.

Fashion dictates that the hair of men should be kept cut pretty short, and of women never cut at all. Probably a mean between these two ways ("in medio tutissimus ibis") would be best—say about as long as a football player wears his; for women's hair very often becomes frayed out and ragged at the ends, and men's hair is not allowed to grow long enough to serve its purpose as a protector against changes of temperature. The farmer, musician, and artist decline to be governed by fashion in this respect and, as classes, have generally well-preserved hair.

The advice has been given to part the hair for a time on one side and then on the other, the idea being that if the part is invariably made in one place, it tends to grow so wide before long as to constitute true baldness. This must be very rarely the case, for most individuals have their hair parted on one side from childhood to old age, and yet baldness is almost always symmetrical on the two sides.

Women should avoid, in dressing the hair, any arrangement which causes constant tugging on any of the hair roots. In other words, it should be done up rather loosely. If this necessitates more frequent attention in order to keep it looking neat, so much the better for the hair. Chemical dyestuffs and bleaches, such as the salts of lead and peroxide of hydrogen, are frequently employed upon the hair for months and even years without the slightest apparent damage; but I believe it to be invariably true that these ultimately so dry up the hair as to contribute materially to its premature fall.

It is important for the preservation of the hair that the hat be properly selected and worn. A hat should be light, so as not to cause undue pressure on any part of the scalp (for it is a matter of common observation that the hairs often atrophy first over the temples, where hat pressure is most felt); it should be freely perforated, so as to provide for good ventilation; or if the weather is so cold as not to allow of such a hat, it should at least be frequently removed. Wearing a hat in the house often keeps the scalp in a state of almost constant perspiration, and the sweat becoming rancid after a while, causes a persistent and injurious irritation of the skin structures.

Syphilis is such a well-known cause of alopecia that many men, on applying for relief from falling of the hair, hasten to assure us that they have never had any private disease. This assurance is unnecessary, as the syphilitic alopecia is generally very characteristic. The hair looks as if it had been nibbled off here and there, leaving tufts of normal length between the bald spots. These occur on all parts of the scalp alike, differing in this respect from other alopecias, and what is still more characteristic, the eyebrows often share in the nibbled appearance. This kind of alopecia is not permanent, but may last for months. Mercurial treatment internally, and ammoniated mercury ointment rubbed into the scalp every night, will shorten the period greatly. The head should be shampooed at least once a week during this treatment. Destructive syphilitic lesions of the scalp sometimes produce patches of baldness, which in this case is of course irremediable.

As for the other causes of premature loss of hair, they are so plainly diagnosed, and the prognosis and indications for treatment are so evident, that they are introduced here merely for the sake of completeness, and will not be further discussed.

In conclusion, it may be stated that the object of this paper has been to call attention to the great variety of causes which may produce falling of the hair, and to show that no treatment is liable to be successful unless based on a proper analysis of the case.

# SOME CONSIDERATIONS ON THE COMPARATIVE THERAPEUTIC VALUE OF ACTIVE AND PASSIVE EXERCISE.

JAY W. SEAVER, A.M., M.D.

It is now nearly twenty years since the eminent neurologist. Dr. Weir Mitchell, called the attention of physicians to the socalled 'rest cure' for many forms of nervous disease and the high value of this form of treatment has been fully established. essential feature of this treatment that is frequently overlooked -perhaps because excluded by the name-is the part played by From time immemorial muscular movements, both active and passive, have been used to assuage pain and to establish healthy processes in various organs. Hippocrates evidently appreciated the value of passive exercises in promoting tissue changes and taught his followers how to employ them in various cases. But the thorough investigation and scientific exposition of the value of both active and passive exercises in therapeutics belongs to the Scandinavian family and to the present century. In our own country the practical application of principles that were utilized by the leading physicians of Europe several decades ago, have been advocated by Dr. Mitchell of Philadelphia, Dr. Taylor of New York, Dr. Graham of Boston, and by many other progressive practitioners, until to-day there is a consensus regarding them and a somewhat earnest inquiry as to the technical forms of exercise and the therapeutic value of each.

For general purposes of classification all exercises are considered to be either active or passive. The first term includes all muscular movements that are initiated by the metabolism of nerve cells more or less remote from the contracting cells but connected with them; the second term includes those movements that are originated outside of the body by mechanical means. The brain, as the center of volition, is the originator of movements in active exercise and, in its more remote ganglia of the spinal cord, it generates such stimuli as can continue customary and oft-repeated contractions. In passive exercises the movements bear only an indirect relation to nerve centers. The muscle mass is moved, it does not move. The nervous elements are acted upon, they do not actuate. To express the means of passive exercise the term massage has been commonly used. It

has also been used to express such superficial manipulation as should apply in general to the nervous system and produce such stimulating or soothing influences as might be produced by other mechanical means than the hand.

We must admit that the idea of massage and of active exercise as held by the ordinary practitioner of to-day is somewhat crude, and that it is employed ofttimes to take the place of the somewhat antiquated bread pill and other placebos, that our antecedents knew so well how to use.

The lack of information regarding the practical application of even passive movement is not confined wholly to the medical fraternity; for while in every city to-day there may be found persons who profess aptitude in this particular art, their training has in general been of the most superficial kind and their work is of about the same grade as their preparation. There has been no opportunity for scientific instruction in this line of work in this country up to this date, except so far as private instruction has passed on to a greater or less extent the more scientific ideas elaborated in the Swedish schools. The training of masseurs in this country has been like the training of acrobats, in that they have been taught to perform certain feats of manipulation and of muscular agility. The acrobat is obviously unfit to act as a medico-gymnast, however expert he may be in the performance of physical feats and the various tricks belonging to his trade, for he understands nothing about the mechanism of the human body and even less about those influences that affect favorably or unfavorably the delicately-adjusted nervous system, on the successful working of which depends health, in every sense of In the same way the ordinary masseur has no conception of the therapeutic value of his manipulations, but performs by rote certain movements that he has been told ought to produce certain results, and his manipulations are given in a hit or miss fashion that fortunately rarely produces bad results and very frequently will meet the exigencies of a particular case.

It is well to bear in mind that exercise is one of the most potent factors in promoting tissue changes and securing a normal outlet for nerve force that is at our disposal. From whatever standpoint we may view the problem, exercise is an absolute necessity to every animal existence. The extent of this exercise or range of possible movement determines largely the capacity of the animal, in both physical and mental directions. If we look upon the cell as being prepared, in its own structure, by its own functional activity for further activity, we can under-

stand how necessary it be that motor areas of the brain have a proper outlet for the exhibition of the force that may be considered to be constantly accumulating in them. If, on the other hand, we look upon the cell as being a store-house of explosive material that has been accumulating from a constant stream of nutrition and that constantly acquires higher tension or tendency to explode, we shall again have the necessity for a suitable field for the exhibition of this force when through some trivial or through some purposeful cause this force shall be discharged.

The muscular mass of our bodies constitutes nearly one-half of our total bulk, and it carries at any one time about one-fourth of all the blood that there is in the body. Furthermore, the muscles are the great heat-producing organs of the body, as they are the furnaces where a large part of the food is ultimately burned to produce the heat necessary for motion. ber that only 20 per cent, or less, of the heat produced by combustion in the muscles is available for mass motion we will have a better appreciation of the function of the muscle in keeping up the normal temperature of the body. The glandular area stands only second in this particular function, and it would seem rational to believe that if the muscles fail in this part of their work a larger demand is made on the glandular structures, and these are the parts that we recognize as being the most frequently affected in the ordinary diseases to which we are subject.

In massage or passive exercise we have the possibility of profoundly affecting the muscular system; or massage may be so applied as to leave the muscles undisturbed and quiescent. The kind of manipulation, then, should vary according to the systemic indications that should be carefully pointed out by the physician to the person who is to perform the manipulation. It is as idle for a physician to call in the services of the ordinary masseur or masseuse and to direct him or her to administer massage to the patient as it would be for him to call in the druggist and order him to dispense medicine without a prescription; neither person is competent to judge of the therapeutic means to be used.

Let us glance briefly at a few of the more common effects of active and passive exercise, and first, on the circulation. It is a physiological fact that the heart seems to respond in both the speed and the energy of its action to the activity of the skeletal muscles. By what means this stimulation is produced we need not state. It only concerns us to inquire whether in passive exercise there is the same rousing of the central organ of circu-

lation. In passive exercise the pressure upon the muscular mass must of necessity greatly facilitate the lymphatic flow and also the venous flow, and this without temporarily producing, obstruction to the arterial flow into the capillaries because we have no tightening up or hardening of the muscular mass. would expect then that the heart would be relieved of a part of its work from such manipulation of the muscles as should bring fairly vigorous and firmly repeated pressure upon the skeletal muscles. This should produce in general a relief of pressure and a consequent slowing of the heart action, which is exactly the reverse of the conditions found in active exercise. points of interest might be mentioned, but this alone would seem to establish the value of this therapeutic means in the care of such cases as have inefficient cardiac power, and where there is a marked peripheral resistance to the circulation. of active exercise upon respiration may be properly compared to its effect upon the circulation. In passive exercise the respiratory process is less passively stimulated, but there is found to be an increase in respiration, due to the new combustion processes that are established with the consequent production of CO, that must be eliminated from pulmonary structures. This, through. a stimulation of the respiratory center, or a peripheral irritation, will excite mildly the respiratory act, and we shall have more frequent respiration or more complete respiration if the frequency be unchanged. Of course this applies only to the manipulation of the muscle mass and would have no application in cases of superficial frictions.

The effect of active exercise on heat-production has been previously referred to, and it remains only to state that by the use of passive exercise and the improvement in circulation the metabolism within the muscle cell can be made to compare to a considerable extent with the changes that occur during active move-This is disclosed by the increased amount of carbonic acid gas that is thrown off and also by the amount of nitrogenous waste that immediately appears in the excretions. ence of this mechanical stimulation on the oxidation processes seems to be favorable to their completion, as is seen by the deficiency in the amount of semi-oxidized products that are eliminated. It has been demonstrated that sarco-lactic acid is produced in smaller quantities by the metabolism produced by mechanical manipulation, than in the oxidation that goes on in quiescent tissue. The influence of active exercise on the processes of excretion is extremely marked. This is due to several causes, among which may be mentioned, first, the improved circulation in the excretory organs: second, in a better preparation of the waste products for excretion, the combustion being carried to its full limit; and third, to the increased activity of the sweat glands for the purpose of the elimination of the extra heat produced.

In passive exercise there may or may not be a marked rousing of the functional activity of the glands. The production of more complete circulation in the vicinity of the gland or in its immediate mass would, of course, tend to produce a greater functional activity of that gland, while the diversion of the circulation to regions remote from it might have an opposite effect, although to determine the exact effect the more elaborate reflex influences would have to be considered and they are exceedingly potent.

The influence of active exercise upon the nervous system is one of its most important functions. We know that a very large part of the whole brain area is devoted to what are called motor cells, that provoke by their activity the contraction of the masses of muscle. The muscles then become the instruments for executing the activities of a large part of the brain, and if these instruments be cut off from use the nerve energy developed will of necessity be turned in other channels, or will cause a degenerative metamorphosis in the brain cells themselves. This law may be said to apply equally to all other organs of the body, for it is observable everywhere that an aggregation of cells whose normal functional activity is cut off will undergo retrograde metamorphosis and become extinct or take on the more common function of storage cells. When the nervous force discharges itself in abnormal directions, we have an abnormal functioning of the organs thus influenced, and abnormal function means disease. If the nerve force reacts more strongly upon the intellectual centers or the coördinating and registering parts of the brain, we have insanity or epilepsy, or hysteria, according to the amount of local disturbance produced. on the other hand, all normal channels for the distribution of this force are open, we must expect that the muscles will perform their daily routine of duty, and in this process not only act as our servants in doing the ordinary manual work of life, but at the same time give an actual relief to congested nerve centers. For this reason do we find the high value attributed to active exercise as a relief from overwrought nervous conditions. influence on the nervous system can passive exercise be properly said to take the place of active movements in relieving the nerve centers? If it may perform this important duty it may properly be considered one of the most efficient therapeutic means that can be used in the relief of an extensive class of cases.

As will be inferred from what has been previously stated, the passive movements produce less active but more complete combustion, and the waste products are in better form for elimination than under more rapid waste production of active exercise. This would favor the bathing of the nerve centers with a nutrient fluid less highly charged with poisonous products and consequently would favor their normal activity. Further, the manipulation of any muscular mass will be accompanied by a peripheral stimulation of the nerve fibers so that the sensory cells are occupied for a time at least in a normal and healthful way. The relation of the sensory to the motor centers in the brain is such that an activity of the one must be accompanied by a more or less general activity of the other. In this way there is undoubtedly a possibility of securing a healthful exercise of central nerve cells by peripheral manipulation, and this relief is secured them by combustions that are characteristic of active exercise, but of milder form, thus saving the organs of nutrition much extra work. However, it would appear that passive exercise cannot take the place of active exercise in the relief of what may be considered over-charged motor areas in the brain, and that its highest use would be found in such cases of mal-nutrition and of cell exhaustion as are found in those cases where debility is the result of overwork and prolonged wear and tear. therefore be preposterous to prescribe passive exercises for a person whose central nervous system was irritable from lack of normal discharge of nerve force, and active exercise would be strongly indicated. A converse of this statement would also be true; that to prescribe active exercise for a person whose motor areas were all overworked, or whose nutrient processes were poor, would be prejudicial to the future health of the patient.

It should then be borne in mind when considering the practicability of prescribing exercise that an intelligent choice should be made, as in ordinary drugs; for in no other way can we expect to obtain uniform and satisfactory results. If the physician does not understand this part of his materia medica he should depend on other methods or put the case in charge of a person who is more expert in this form of treatment; as he would refer to a surgeon any case that required more than ordinary knowledge of surgery for its proper care.

### THE TREATMENT OF EPILEPSY.\*

By Joseph Collins, M.D., of New York. Visiting Physician to the City Hospital, Attending Physician to St. Mark's Hospital.

General Considerations. Clinical Forms of Epilepsy.-Before one can discuss intelligently the treatment of epilepsy it is necessary to be explicit about the form of epilepsy of which Epilepsy has been variously classified according to its origin, its etiology, the time of life at which it appears, its symptomatology, its purity and its complexity. Clinically epilepsy is divided into petit mal, haut mal, psychical epilepsy, epilepsy procursiva, periodic sleep seizures of an epileptic nature, etc. Such a classification is of service to illustrate types of the disease, but it is of no aid in determining a plan of treatment. The neurosis epilepsy, it matters not what outward form it assumes, predicates, if I may be allowed to project the theory, a similar diseased condition in every instance, it matters not what the clinical manifestation of the disease may be. and all forms require practically the same treatment. division of epilepsy into organic and functional may be said to be no longer justified if our theory of epilepsy, a theory now supported by many scientific pathological demonstrations, is Still such a division must be tolerated until we are able to refer the symptom epilepsy to a firm anatomical basis in every In truth a modification of the classification of epilepsies into organic and functional is a useful one from which to discuss treatment, it being kept in kind all the time that by use of the word functional we do not mean to convey the absence of tissue change, for I believe there is in every case of epilepsy, at least in those cases that have lasted for any time, some structural abnormality.

In discussing the treatment of epilepsy I shall describe, first, the form of epilepsy that occurs before the age of maturity, generally manifesting itself before the time of puberty, without direct causation except what may be attributed to heredity, consanguinity, parental vice, and some non-sufficient exciting

<sup>\*</sup>Read before the New Haven Medical Society, February 4th, 1897.

cause such as fright, great anxiety, excessive mental applica-This is the kind of epilepsy to which the name idiopathic has been given for want of a more accurate term to indicate its causation and anatomy. At the present day these cases are referred to as hereditary epilepsy, or primary epilepsy. what proportion of all epilepsies this form constitutes, it is difficult to say. I feel sure, however, that unquestionably the great proportion of all cases of epilepsy which develop before puberty are usually put in this category, but it does not include very many, or, better said, any considerable proportion of the epilepsies that develop after the period of maturity. To be more explicit, it is impossible to say just what proportion of cases of epilepsy developing before the age of puberty, is associated with congenital and acquired defects which are either so slight, or have been so compensated by a process of repair that no manifestation except epilepsy is present; and, on the other hand, how many are dependent upon defective development of the proton and congenital and post-natal developmental short-comings.

In the vast majority of cases that develop after maturity epilepsy is a symptom of some organic disease of the brain. Year after year the cases of purely congenital "idiopathic" epilepsy are becoming fewer, while the category which embraces epilepsies due to encephalitic conditions, injuries, and cerebral infantile palsies, is becoming more comprehensive. The epilepsy termed organic is, when the organic process is circumscribed, known as Jacksonian, cortical or focal epilepsy, and as general epilepsy when the organic process is not focal or localized. It needs to be emphasized that the term Jacksonian, as generally used, does not apply to the process but to the clinical manifestation.

Jacksonian Epilepsy.—The focal, organic, epilepsies occur most frequently in adult life, except when they are the expression of new growths, post-meningeal cicatrices, meningeal and cortical hæmorrhages, and other accidental conditions which may occur at any time after birth. In adult life this form of epilepsy is most frequently the expression of traumatism to the skull, setting up localized pathological changes; gummatous meningitis of the convexities, leptomeningitis, endarteritis, localized gummatous formations, or all, or some of these lesions combined, constituting cerebral syphilis. Naturally, the same factors that we have mentioned as causative of organic epilepsy in the child may be operative in the adult and result in similar conditions, which will be manifest by symptoms of the same type and form.

Reflex Epilepsies. - Epilepsies that are a symptom of some form

of central or reflex irritation are not common. Such epilepsy may result from irritation of areas of the brain which are not considered strictly motor, from hydrocephalus, from toxemic conditions such as uræmia, diabetes and absinthe. On the other hand, a similar epilepsy may be the result of some form of peripheral irritation and particularly from irritation of some special sense or highly endowed organ of tactile sensibility, such as the sexual organs. I believe that this brief statement represents all that need be said of so-called peripheral or reflex epilepsy, but, for fear of misconstruction, I desire to say that the epileptic manifestation which may follow continued irritation of some peripheral sense organ is a disease in no way comparable to primary, to congenital, to organic epilepsy, or even to a toxic epilepsy. As I construe it, the epileptic attack or attacks which result from peripheral irritation, are probably a clinical manifestation of a genuine neurosis, or of a general neurotic condition, which, however, might not display itself by convulsive phenomena if the peripheral irritations did not exist.

The reflex epilepsies should not be considered in too great detail even to deny their more than rare occurrence compared with the entire number of epilepsies in which no cause can be discovered for the existence of the disease. Their consideration by enthusiasts and "faddists" has already done immeasurable harm, and the past history and literature of reflex epilepsies, as well as the makers of such histories, deserve to be speedily forgotten. No honest, properly-trained physician ever fails to completely examine a patient, and, if he discovers a condition of the foreskin that interferes with its functioning he removes it, just as he would remove a thorn from a man's foot if he found that it interfered with his walking; but this does not prompt him to tell the profession of his success in curing people who are unable to walk, nor does he desire to be considered an orthopedic surgeon. No more should a physician who amputates a foreskin or releases an adherent clitoris and so destroys a source of peripheral and central annoyance, claim to be the discoverer and possessor of a new method in the treatment of epilepsy. my opinion, the most dangerous specialist in the treatment of epilepsy to-day is he who claims to cure his patient by partial. complete, multiple or repeated tenotomies of the eye muscles. Before going further, I hasten to disclaim any prejudice either against the men who have made or are making such claims, or their methods; but it does not seem to me that a person who has examined into this matter carefully, as I have, can be led to any

other conclusion. There is some slight evidence that patients afflicted with epilepsy are also the possessors of refractive anomalies more frequently than are their fellow-beings who are not epileptic, but the truth is that such ocular imperfections are but one of the somatic stigmata of degeneration and should be classified with the prehensile finger, the bullet-shaped head, the Darwinian tubercle, the Lamarckian hypothesis, the torus palatinus, and the many other defects which statistics prove beyond cavil are the natural possessions of the epileptic. I believe further that such muscular insufficiencies and refractive shortcomings should be corrected, but if I were to believe that such a procedure could cure the epilepsy, I must needs not only forsake my present conception of the pathology of the disease, but I would have to submerge my logical faculties as well. In a similar way any source of irritation or discomfort to the patient should be sought for and removed. The ears, Eustachian tubes and nasopharyngeal region should be examined repeatedly and carefully, and any abnormality there found corrected or removed.

Theory of Epilepsy.—The theory that best explains attacks of epilepsy is the theory that fits in with the conception of a histological neural entity; that is, the anatomical element or unit, the neuron, with all its structural completeness—the cell, the axis cylinder or neuraxon, the terminal arborization, but especially the terminal endings of the protoplasmic or dendritic processes of the cells. Any organic disease, or any injurious condition that sufficiently interferes with the nutrition of this anatomical unit, and particularly of the terminal arborization of the dendritic process, be these diseases developmental, accidental or degenerative, diminishes the functional ability of this part of the nervous system, and thus causes a diminution in the potentiality of these structures, manifested intermittently by the liberation of energy, which liberation is sometimes termed an explosion of motorial force, or, in short, an epileptic attack.

This theory may be amplified and modified to explain the various clinical forms of epilepsy, be they motor, physical, sensory, procursive, explosive, equivalent, *petit mal*, or *grand mal*. And, on the other hand, without doing violence to the tenets of the theory, we may explain according to it the efficaciousness of the most useful plan of treatment, the only plan, in fact, that is of any signal service in true epileptic neurosis; *i. e.*, the bromide plan.

General Treatment of Epilepsy.—A consideration of the philosophy of the treatment of epilepsy is no inconsiderable aid to the

proper application of the medicinal treatment, and to it we shall revert later.

The therapeutic treatment of epilepsy deserves to be considered according to the genesis of the epilepsy and not according to its clinical manifestations. The plan of treatment that is beneficial and applicable to primary, so-called idiopathic, congenital epilepsy, is not the proper treatment for syphilitic, traumatic, accidental epilepsy, nor is the treatment of either of these appropriate for the epilepsy which is dependent upon purely degenerative processes, such as parasyphilitic, post-cicatricial, etc., degenerations. The treatment of epilepsy should be classified into the moral and hygienic treatment, which includes the diet, the discipline, the education of the patient, and all that these imply, and, secondly, into the medicinal treatment which embraces the time of administration, mode of administration; i. e., the vehicle, the uniformity of the solution used, and the measures taken to offset disagreeable effect of treatment.

Moral and Hygienic Treatment.—Experience has taught me, and I am sure that it has taught others who have had a considerable experience with this disease, that the reason why physicians fail so often to effect such pronounced amelioration, we will not say cure, of the disease as to satisfy patients and families, is because they neglect almost entirely the moral and hygienic treatment and depend for their success, a fatuous ambition, on the administration of medicines alone. The result is failure. I am sure I echo the sentiments of many practitioners when I say that they dread the advent of an epileptic patient after they have had several trials at attempting to cure him. I am desirous of emphasizing the necessity of the most stringent application and utilization of all forms of moral and hygienic treatment, because I have on many occasions been a willing witness of their efficacy when medicines alone were of but little use.

The moral treatment by which, I hope, I will not be understood as implying only the utilization of the canons of ethics, for I use the term in its widest sense, is particularly adapted to the primary congenital variety of cases. This kind of epilepsy occurs most commonly at an age when disciplinary measures are most efficacious. Habits of obedience and the restraint of passions and appetites, cultivation of emotional equanimity, of temperate mental application and of industry should be striven for. The education of these unfortunate beings should not be neglected; on the contrary, it should be assiduously cultivated. The education should not be alone of the mind, but of

the senses and particularly of the hands. Many epileptics, if properly trained, become artisans, masters of handicraft and laborers, sufficiently skillful to earn a livelihood and frequently to compete with their non-handicapped fellow men. methods for the education of backward children, teaching mainly by the aid of environment, are the best means for contributing to mental development. Hand in hand with this should go the education of the body. If these children manifest any special predilection or ability for certain occupations, providing such do not involve excitement and strain, it should be fostered, while, at the same time, the bodily and mental life are cared for. Such details may seem pedantic, but the utter hopelessness of these cases, if they are allowed to go on without other or more intelligent surveillance than that of the ordinary parent, warrants The enthusiastic pedagogue and the intelligent physician should combine to make the best possible citizen out of the defective epileptic child. Institution treatment, where all these forms of moral, mental and physical development can be carried out, is the ideal one. The necessity of beginning the education and treatment of an epileptic before the disease has continued for a certain length of time for what may be conveniently called the "epileptic habit" to develop, is very essential.

The hygienic treatment of epilepsy is embraced in the regulation of the mode of life of these patients, their habits, indulgences, diet, exercise, movements, occupation and the assumption and discharge of special functions and obligations. Climatic conditions do not seem to enter into the treatment of epilepsy.

The mode of life of an epileptic patient should be one that allows him to be free from care, untrammelled by any considerable responsibility, and conducive to mental equanimity. contraction of habits of all kinds, unless that of uniform occupation be considered a habit, must be deprecated. Tobacco, alcohol and other unnecessary luxuries which may easily be made injurious, are to be absolutely interdicted. Although it is impossible for a physician, and frequently unfeasible, to in any way interfere with the development of the normal passions, such as love leading to engagements, etc., marriage for the epileptic is to be severely frowned at. Any form of exercise that is not attended with great physical effort, or that will not jeopardize the patient's life or limb if an attack of epilepsy should occur while he is participating in it, is to be allowed and recommended. Of the sports that of golf, perhaps, in which frequently no

other strife enters than the promptings to outdo one's self, is the ideal one, although I have more than a few epileptics who engage in bicycling and other popular and pleasurable forms of exercise.

It is a fact well-known to every physician that unusual care must be taken to keep the physical condition of an epileptic up to that of an ordinary person who does not take any exercise or gymnastic drill for its maintenance. What has been said of exercise applies also to amusements. There are very few amusements that an epileptic should be prevented from enjoying. going in moderation, especially in the afternoon, social intercourse if the mental state of the patient allows it, parlor games and the like, all contribute to vary the monotony of existence. The assumption and discharge of social functions by epileptic individuals will vary with each individual, and will have to be decided by the physician according to the development of the patient. In a word it may be said that if a person who has epilepsy is capable of discharging such function, none except that of marriage should be advised against, providing they do not interfere with the regularity and methodical arrangement of his life. The nature of the disease requires that for its treatment large quantities of a medicine which acts as a powerful depressant, be taken for a considerable time. In order to overcome the peccant effects of this substance, nature's best restorer should be obtained in liberal amounts.

Diet for Epileptics.—More important than all of this, perhaps, and very much more important than any one of them, is the Like other functions of the body in epileptics, question of diet. that of alimentation is frequently impaired, and this combined with defective inhibition and restraint of the appetite frequently results in the most disastrous dietetic consequences. At one time it went abroad and even met with acceptance in some quarters. that nitrogenous substances, such as meat, should not be consumed by people suffering from epilepsy, or, if so, then in greatest moderation, and those who recommended such a plan were often able to fortify their claims by statistics which showed that the number of epileptic attacks in an individual who was not allowed to take meat, was considerably less than when he so gratified his appetite. The post hoc, propter hoc, of this argument is, however, a most fallacious one, cutting off animal food very frequently gives the overburdened digestive tract an opportunity to rest and causes a partial cessation of the products of incomplete digestion and metabolism which, on being absorbed into the system, exercises a pernicious effect upon the highest nerve centers, and in this way apparent benefit for a time has seemed to result. Far greater benefit, however, is secured when the entire dietary is subjected to the physician's scrutiny. Epileptic patients should be given a mixed diet; neither the animal nor vegetable products, nor the starches, nor the fats should predominate, nor should the one be taken to the exclusion of the others unless some special reason for such exclusion exists. Fermentable substances of diet, like starches and sugars, substances difficult of digestion and which, when digested, contribute but little to alimentation, are to be avoided. If all other treatment of epilepsy than that directed to the regulation of the alimentary canal and the maintenance of a normal digestion with a high state of nutrition, were weighed, it is probable that more benefit would follow than from the administration of the best medicinal anti-epileptic measures alone, while dietetic errors were rampant.

One word before I conclude what I have to say concerning the general treatment. Do not be misled by the temporal cessation of attacks; even though a patient has been free from attacks for two years do not forsake him as cured, but keep up the same watchful care of his general condition and the same persistent administration of remedies, though in small quantities.

( To be continued).

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MEDICAL EXPERTS AND THE HOMICIDE is the title of a thesis by Dr. Henry Smith Williams in the February number of the North American Review. The subject is considered in three divisions:

- I. How shall the medical expert be secured?
- II. How shall his services be utilized?
- III. What shall be done with the insane law breaker?
- I. Experts as usually consulted in criminal cases are of two classes. The one class comprises chemists and pathologists, the other alienists who are asked to determine as to the mental condition of an accused person. A physician may have the best professional training and the highest standing in his profession and yet be utterly incapable of making a thorough microscopical or chemical examination, or of forming a really competent judgment as to the mental condition of an obscure case of alleged insanity. Therefore, put the position of medical expert on some such basis as the medical positions in our State Hospitals, where no one can secure a position as physician who has not shown certain qualifications as to education, general and special, and moral standing in the community, and in addition passed an

examination prepared especially to test his particular qualifications for the peculiar work on which he desires to enter. A civil service board shall first determine the eligibility of the applicant. Common sense would suggest that the preliminary qualifications should include also in the case of the chemist and pathologist, practical working experience in connection with some recognized laboratory, and in the case of the alienist, actual experience as a resident physician in an asylum for the insane for a period of not less than three years.

II. The position of the expert is essentially that of a judge or juror. He must be absolutely unprejudiced. sented to him for determination certain matters concerning a subject of which he has unusual knowledge, and having reached an opinion, desires nothing but to speak it, fully and freely. there any reason why this scientific expert should be asked to take the witness stand and turn the court room into an experimental laboratory? or why he should spend hours holding technical discussions there, in terms which the jury cannot possibly comprehend? Is it probable that anything the lawyers can say will alter his opinion as to what chemical he found or did not find in the "exhibit?" What then would common sense suggest as the modus operandi of utilizing the knowledge of the chemical or pathological expert in a specific case? From the list of qualified experts, a suitable number should be selected, by a judge, to act as a commission and subject the "exhibits" to examination or analysis, and the finding should be delivered to the judge, not directly to the district attorney.

The cases in which an expert alienist may aid the law are somewhat different in character from those just considered. As before, the experts should serve in the capacity of a judicial commission, not as witnesses in the ordinary sense. The commission should be empowered to use all legitimate means to get at the facts. Arrived at the facts they should make a sworn statement to the court and be discharged. In an exceptional case the spokesman of either commission might be called to the witness stand, to be further questioned by the court, for its own enlightenment or that of the jury. That the commission is called by the State and paid by the State, no more militates against its impartiality than do the same conditions militate against the impartiality of judge and petit jury. The plan here proposed is substantially that in use in Germany.

III. The phrase "insanity dodge" has passed into current speech, voicing a prevalent impression, as indicating that the

plea of insanity is often made as a mere subterfuge in murder Doubtless this does sometimes occur, but far less frequently than is imagined. It much more often happens that an insane homicide is convicted of murder than that a sane homicide is acquitted on the ground of insanity. The question of the disposal of the insane homicide is fortunately a matter of law in Connecticut (Conn. Stat., sec. 1601): "Any Superior Court, city court, or police court in this State, before which any person shall be tried on any criminal charge, and acquitted on the ground of insanity or dementia, may order such person to be confined in the Connecticut Hospital for the Insane for such time as such court shall direct, unless some person shall undertake before said court, and give bond to the State, conditioned to confine such person in such manner as such court shall order; and said court shall appoint an overseer to such person, if he have any estate, with the same powers and duties as conservators appointed by courts of Probate, such overseer giving suitable bond to the State, conditioned for the faithful performance of his trust." Provision is made for the few cases in which recovery may take place (Conn. Stat., sec. 1602): "Any person who has been tried on any criminal charge and acquitted on the ground of insanity or dementia, and confined in the Connecticut Hospital for the Insane, may petition, or the officers of said institution may petition, the Superior Court of the county in which he is confined for his enlargement, and the petition shall be served like civil process on the selectmen of the town to which he belongs, and upon the person, if any, upon whom the offense was charged to have been committed, and upon the State's attorney of the county in which the trial was had, and said court shall make such order as to his disposal as it shall deem proper. and said State's attorney shall appear and oppose such application."

Sec. 1603 has to do with the further confinement of all insane persons: "When any person shall have been tried on any criminal charge and acquitted on the ground of insanity or dementia, and shall have been confined in the Connecticut Hospital for the Insane for any specific term by the order of the court before which such trial was had, and shall, at the expiration of such term still be suffering from insanity or dementia, the superintendent of said Hospital shall certify said facts to the State's attorney for the county wherein such trial was had, and said State's attorney shall thereupon procure from said court and said court is hereby authorized and empowered to issue an order

for the further confinement of such person in said Hospital until he recovers from such insanity or *dementia*, and the clerk of said court shall thereupon transmit to said superintendent a new warrant of commitment based upon said order."

No more delicate or difficult subject ever came before the consideration of any body of medical men than the question, "What shall be done with tuberculous patients?" The Health Board of New York City has taken the initiative in a radical policy by its proposition to establish isolation hospitals wherein those suffering from the disease should be confined and treated. This action, although it may not be consummated, has opened up a discussion which the future must necessarily decide and which is not only of vital interest to New York but which must be decided sooner or later by almost every medical board in the country.

The infectiousness of tuberculosis is now undisputed and the ravages of the bacillus of Koch accounts for nearly one-fifth of the deaths in any community. Where consumptives segregate there consumption is propagated. Colorado with its dry atmosphere and equable temperature, whose resorts were once the Mecca of the victims of pulmonary disease, has now in many places become infected with the irrepressible microbe, and phthisical patients who formerly rapidly improved under favorable climatic surroundings now cannot withstand the inroads of continued re-infection.

Granting the infectious character of the disease it would seem justifiable for any community to adopt such measures as are followed in other diseases of the infectious type. From this point of view it would appear that every means that would tend to restrict the disease is just and proper, but a question far more important in its significance arises, How far has the community the right to deprive an individual, apparently healthy and in many cases self-supporting, of his liberty? How practical could any isolation be in consumption, many of the stages of which are so covert and insidious that they well-nigh baffle the expert? We are all jealous of any infringements upon our rights as individuals; we all would fight against any encroachments upon our liberties (and tuberculosis is so regarded by the laity at the present time, contact with it not being feared) that any attempt at isolation would seem to be a suppression of rights and liberties, would be most unpopular and as a result would be impracticable. In all public institutions for the care of the sick it is not only possible but highly probable that isolation could be effected with results beneficial even to the sufferer of this dread disease, and movements are now on foot to accomplish this in the Hartford Hospital of this State.

It seems hard for the popular mind to comprehend the work which is being done in the medical schools of our country and the disadvantages under which many of them are laboring. For the most successful maintenance of a modern medical school three factors are indispensable—viz., (1) proper hospital facilities; (2) a suitable material plant, by which we mean well-equipped laboratories and all necessary apparatus for scientific work; (3) endowed chairs in certain branches.

It is in the matter of endowed chairs that the most lamentable weakness exists. In all the medical colleges of the country there is but a mere handful of such endowments. In certain branches, to be sure, they may well be regarded as superfluous but in such fundamental subjects as anatomy, physiology, chemistry, hygiene, histology, pathology and bacteriology, which ought, for proper teaching and study, to be under the least possible restrictions, endowments are certainly needed. It would seem as if the time must soon come when the true philanthropist will realize that in no other way can money be applied with more far-reaching influence and with more ultimate advantage than by creating endowments in the medical departments of our universities.

#### MEDICAL PROGRESS.

TREATMENT OF SCARLET FEVER BY THE ANTI-STREPTOCCUS SERUM.—Dr. Mamuoreck in La Clinique. The author states that during a period of some ten weeks ninety-five children were treated with the serum. From ten to eighty cubic centimeters were injected according to the severity of each case. on the lymphatic enlargement was noteworthy, nineteen cases resolving without suppuration. Four cases of double otitis were promptly controlled, while in another the inflammation developed, but soon ceased. In two cases of albuminuria the kidneys were restored to their normal condition with one or two doses. No serious complication arose from the use of the anti-strepto-Absolute asepsis must be preserved in making coccus serum. While these cases are too few to draw definite the inoculation. conclusions the author believes the serum will be of value in treating scarlet fever.

Deformity of Uvula in Insanity.—After examining one hundred cases of insanity Dana claims deformity of the uvula to have existed in fifty-three of them, which he infers to be due to unequally developed nerve supply of the two sides, and he asserts that the azygos uvula of more than half of all degenerates does not act.

TRAUMATIC TETANUS TREATED BY HYPODERMIC INJECTION OF CARBOLIC ACID. - Dr. Eddowes in the London Lancet, January 16th. reported that on the 14th of June he was called to see a patient who, on the 19th of May, had received a puncture wound from a boot nail on the inner side of the ball of the great toe. On the 13th of June the patient's jaws were firmly closed and the muscles of the back rigid. The following day there was fully developed trismus with pains in the muscles around the lower jaw, rigidity and arching of the neck, arching of the back, and contractions of the abdominal walls. The pulse was 66 and the temperature o8 degrees F. The treatment consisted of chloral hydrate and potassium bromide every four hours. On the 18th the rigidity was less extreme, but the convulsive twitches were more frequent and intense fetor of the breath was noticed. The treatment was now changed. The diet was mainly eggs and milk, with brandy. Ten grains each of chloral hydrate and potassium bromide were given every two hours, and five minims of carbolic acid, 2%, were injected hypodermically morning and evening. The first two drugs were followed by intense twitchings and excitement, but after the carbolic acid no after effects were observable. time of the first injection the pulse was 102 and the temperature 100.8 degrees. By the 19th the pulse was 90 and the temperature 99.8 degrees. The convulsive movements and the rigidity were much lessened. By afternoon of the same day the patient was so much better that the carbolic acid was given but once a day. On the 21st the pulse was 72 and the temperature normal. By the 23d the rigidity was very much better and there were no paroxysms. From this time the patient made a steady and uninterrupted recovery and is now in perfect health.

METHYLENE BLUE IN GONORRHEA.—(Brit. Med. Jour.) Dr. J. Moore of Belfast, Ireland, was consulted by a man on the 25th of August who had intercourse with a woman three days previously. The meatus was congested and a serous discharge visible. Methylene blue 3 grains daily, and citrate of potassium 20 grains daily, were prescribed. On September 2d he had no pain and the discharge was sero-purulent and scanty. On the 10th

there was no pain and no discharge. On September 22d there had been no recurrence. In a second case treatment was not commenced until seven days after intercourse. The penis was swollen, the glands congested, the discharge copious, and on microscopic examination showed the presence of many gonococci and staphylococci. The same treatment was resorted to, and on examination five days afterwards the pain and swelling had gone and the discharge contained but few cocci. These were stained. By the 'twelfth day the discharge had stopped. The drug was found to undoubtedly cut short the acute stage before the mucosa and submucosa were extensively damaged. The drug is excreted by the kidney unchanged, so that the patient in urinating, flushes the urethra with a fluid capable of staining the organisms and the mucosa of the urethra.

TREATMENT OF NOCTURNAL ENURESIS.—Coquetti de Martius (Puglia Medica, iii. 5), successfully treated a case of nocturnal incontinence by Fiorani's method. The patient was a man who had been afflicted from his childhood with nocturnal enuresis, due to no discoverable organic cause. To the patient's hand as he lay in bed was fastened a cord which passed over the end of the bed and to which was tied a bag containing fifty grammes of dry sand. An involuntary micturition occurred the first night, arousing the patient. The following night a weight of one hundred grammes was attached to the cord which resulted in arousing the patient when there was need to micturate. After continued treatment with the same result the patient resumed his work cured. The success of this treatment is due to the nature of the disease considered by Fiorani to be a psychical disturbance. It is apparently nothing more than somnambulism of the bladder, comparable to ordinary somnambulism and amenable to similar kind of treatment.

To Remove a Foreign Body From the Nose, Urethra. Etc. —In the Gaz. Med. de Liege, Univers. Med. Jour., Benguies describes a simple method by which he removed foreign bodies from small passages. A hole is bored in the end of a probe and a thread fastened in it. This is then introduced into the passage and carefully pushed past the foreign body. The string then is held in one hand and the probe in the other, thus a loop can be formed in which the foreign body can be withdrawn.

DYSPEPSIA ACCOMPANIED BY ACNE.—In the issue of the Revue de Therap., December 15, 1896, Mitour recommends light meals,

frequently repeated and well masticated, for cases of dyspepsia accompanied by acne. Pastry, spiced meats, bread, butter and fatty foods should be avoided. Alcohol and Milk are also harmful. Water is the best drink, though it should be taken sparingly with meals. Medical treatment should be, first, the stimulation of the acid secretory cells of the stomach by means of bicarbonate of soda with sulphate of soda and potash in small doses, or ipecac, or cundurango, to be given before meals; second, to prevent fermentation, B-naphthol, benzol, or salicylate of bismuth are to be used; third, to increase the muscular action of the stomach the tincture of nux vomica may be given after meals. For constipation sulphate of soda and calomel are recommended. In some cases hydrotherapy, abdominal massage and electricity have given very satisfactory results.

DETECTION OF LEAD IN THE URINE .- (Lancet, Jan. 16, 1897). Dr. John Hill Abram of Liverpool gives the following method for the detection of lead in the urine in cases of chronic lead poisoning when the symptoms are varied, insidious and irregu-A strip of pure magnesium is placed in the fluid to be examined; ammonium oxalate in the proportion of 1 gramme to 150 c.c. of fluid is added. If lead be present a deposit occurs within a half hour, but the magnesium is left in the fluid from twelve to twenty-four hours; it is then removed, washed in distilled water and dried. Confirmation of the test is made by warming the strip with a crystal of iodine, forming yellow lead iodide; or the deposit may be dissolved in nitric acid and the usual qualitative tests applied. Dr. Abram states that one part of lead in fifty thousand of fluid can be detected.

# HOSPITAL AND CLINIC NOTES, ETC.

The following operations to which the students of the Medical School were invited took place at the New Haven Hospital in the past month: January 19—Hypertrophy of the cervix. Radical cure of hernia. January 20—Radical cure of hernia. January 22—Extraction of glass from Carcinoma of vulva. palm of hand, located by X-rays. January 24—Skin-grafting January 27—Tumor of forehead. Tumor of (Thiersch). Skin-grafting (Thiersch). Curetting ulcer of abdo-January 31—Vesical calculus. February 5-Vaginal hysterectomy for uterine prolapse. February 10-Tumor of breast. Enucleation of eye.

#### A REVIEW OF CONNECTICUT HOSPITALS.

A brief comparison of the different hospitals of Connecticut will be found below. The comparison is based upon the late reports received by the YALE MEDICAL JOURNAL:

New Haven Hospital—(This year's report is not yet printed. A more extended extract will be given when it appears).

The total number of patients under treatment 1,140, a daily average of 112. The largest number was 133, the smallest 96. The deaths numbered 140. Forty-six persons died within 24 hours after arrival, 14 within 48 hours. The births numbered 31.

The average cost of maintaining patients was \$8.77, and of the 1,140 patients, 84 paid the full cost of support; 827 partial cost, and 229 were supported by charity or free beds. Two thousand three hundred and nineteen was the total number of weeks furnished in this way. The Nurses Training School has been in a flourishing condition. A. G. Nadler, Y. M. S. '96, and S. H. Wadhams, Y. M. S. '96, are on the resident staff.

Hartford Hospital, 41st Annual Report.—During the year October 1895-October 1896, 1,563 persons were admitted, making an aggregate of 1,692 under treatment, 1,048 males and 644 Of this number 1,128 have recovered, 189 have improved, 71 not improved, 180 have died. Of these 23 were accident cases and died a few hours after admission, 30 were hopeless cases; 25 were due to consumption. The 96 occupations represented are as follows: Laborers 254, housekeepers 241, domestics 165, factory operatives 49, brakemen 39, teamsters 32, clerks 25. Of these 870 were Americans, 654 foreign-Ether has been administered 347 times, ers, and 30 unknown. chloroform 12, cocaine 68, no anesthesia 80 times. There have been 146 cases of typhoid fever cared for during the past year in the medical wards with only 8 deaths. There were 46 births, 25 The ordinary charge per week is \$6.00, males and 21 females. which includes medical and surgical care, together with medicine and nursing. The expenditures for the year amounted to \$58,770.31; of this \$18,428.34 was for salaries; the balance, living expenses, drugs, etc. There were 779 medical cases, 653 surgical cases, 278 obstetrical and gynecological cases, 16 orthopædic cases, 68 eye and ear cases, 176 eye and ear clinics. The Training School for Nurses graduated 12 during the year; 31 are now on the roll. H. F. Smith, Y. M. S. '96, is House Physician.

Bridgeport Hospital, 17th Annual Report.—During the year September 30, 1895-1896, 561 persons were admitted, 340

males, 221 females. Of these 206 were cured, 123 improved, 40 didn't improve, 83 died. The occupations represented were: Housekeepers 115, laborers 65, factory hands 29, school boys 27, school girls 17, housewives 29, farmers 20, unknown 53, the balance scattering. The ordinary charge in the wards is \$7 per week which includes medical and surgical attendance, board, There were 14 cases of typhoid with 1 medicine and nursing. death, and 26 cases of phthisis. Births numbered 5. penditures for the year amounted to \$26,198.18, of this \$8,126.07 was for salaries and wages, the balance were living expenses and medicines, drugs, etc. There were 218 medical cases, 221 surgical cases, 149 operations, 56 gynæcological cases, 33 gynæcological operations, 167 eye and ear diseases, 51 eye and ear operations. Nine nurses were graduated during the year. nurses are now enrolled in the school. Thomas L. Ellis, Y. M. S. '96, is House Physician and Apothecary.

The Waterbury Hospital, 6th Annual Report.—During the year, December 1894-1895, 286 were admitted-154 males, 132 females. Of these 217 were discharged, 43 died, and 26 re-There was 1 birth. Of these 84 were Americans, 37 mained. Irish, 14 Italians, the rest scattering. The 286 occupations represented 63 housewives, 35 laborers, 28 factory operatives, 21 students, 18 domestics, 10 clerks, 29 unknown, the remainder The lowest charge to patients is \$7 per week, for which are furnished medical and surgical care, nursing, medicines and food. The expenditures for the year amounted to \$15,-774.58, of this \$4,828.42 was for salaries, the balance living expenses, medicine and surgical supplies, etc. There were 152 medical cases, 94 surgical cases, 40 ophthalmic cases.

This report was inserted for the purpose of comparison. The report for December 1895–1896, will be inserted later, as will also a fuller report of the New Haven Hospital and a report from the Meriden Hospital.

The William W. Backus Hospital, 3d Annual Report, October, 1895-1896.—Admitted during the year 251; 156 males, 95 females, making a total for the year 268 patients under treatment. Of these 131 were cured, 71 improved, 7 didn't improve, 16 not treated, 27 died. There were 4 births. There were 62 occupations represented—housewives 46, mill hands 24, laborers 2e, servants 18, farmers 12, coal shovellers 8, brakemen 6, no occupation 40, the rest scattering. Nativity of the patients shows 146 Americans, 38 Irish, 11 German, 10 Russian, 9 Swedish, 8 English, 7 Cape Verde Islanders, 5 Scotch, 5 Canadians.

The ordinary charge per week is \$7, which includes medical and surgical care and food, together with medicine and nursing. The expenditures for the year were \$17,223.86; of this \$7,371.65 was for salaries and wages; the rest for living expenses, medicine and surgical necessities, etc. There were 115 medical cases, 132 surgical cases, 22 gynecological cases, 14 aural and ophthalmic cases. The Training School for Nurses graduated 4 during the year; at present there are 8 nurses in the Training School. S. H. Wadhams, Y. M. S. '96, was House Physician during the Summer.

# ITEMS OF INTEREST.

Professor Haffkine, who has been conducting a series of experiments in the treatment of the plague, claims that he has proved the efficacy of attenuated plague virus as an antidote for the disease. One hundred and fifty-six prisoners in the city jail at Bombay have been inoculated with this and the results are awaited with much interest.

Dr. E. H. Wilson, the bacteriologist of the Health Department of New York City, has been making important researches upon the plague microbe, and has discovered that these germs are killed by a moist heat of 140 degrees F. or by a dry heat of 160 degrees F.

The New York Board of Health has announced its intention of enforcing the ordinance forbidding people spitting on the floor of public conveyances.

The German Government is about to send a special mission to Bombay to investigate the Bubonic plague with a view to the adoption of precautionary measures against its introduction into Europe. Dr. Koch, the eminent German bacteriologist, has been summoned from South Africa to head the commission.

From Vienna is reported a case of fatal poisoning by arsenic in the vagina. A servant was admitted to a hospital in great prostration, but as she claimed that she was menstruating no pelvic examination was made. After death a paper bag still containing arsenic was found in the vagina. The case was probably suicidal. The doctor who reported the case quoted an instance where early in this century a man murdered three of his wives by introducing arsenic into the vagina,

An international exposition of hygiene, of alimentation, and of industrial arts will take place at Lille in the months of March and April, 1897, under the auspices of the municipalities. The Ramean Palace has been placed at the disposal of the committee on organization.

The degree of M.D. was recently conferred upon Prince Bismarck. Thus the man of blood and iron is possessed of all the doctor's degrees conferred by German universities.

The medical societies of the State of California have long had the matter of lodge service and free clinics under consideration, and recently steps were taken to wipe out a few of them. It is maintained that they are responsible for a considerable part of the quackery practiced within the State under cover of benevolence.

Improvements at Bellevue and Blackwell's Island Hospitals.—The Board of Estimate and Apportionment has approved plans for the construction of two pavilions for erysipelas and contagious cases, and for a new boiler and laundry building at Bellevue Hospital at a cost of \$180,000, and also for a new kitchen and two towers at City (Charity) Hospital on Blackwell's Island at a cost of \$72,000.

Pellotine is one of the latest hypnotics, an active principle obtained from a Mexican cactus. The hydrochlorate is employed by the mouth or subcutaneously in dose of from four to six centigrams. It is thought that it may occasionally replace other hypnotics with advantage.

Cremation in England is gaining ground. As we have noted, the late Mr. George DuMaurier was cremated at Woking on October 10th, and during the past few weeks the remains of Dr. J. L. H. Langdon Down and of Surgeon General Sir William George Moore have also been cremated.

Cohn, a celebrated bacteriologist, says a single germ could, under favorable conditions, multiply in three days to 4,772 billions and make a mass weighing 7,500 tons.

Probably the most protracted case of typhoid fever on record is that taken from the practice of Dr. Faulkner of Dublin, Ireland, and extended over a period of 290 days. After hearing all the discussion in the matter the society decided that this was a genuine case of typhoid with perhaps some undiscovered complications.

The insane in the city of London are said to number 13,000 with an annual increase of 600.

The President of Brazil is a physician and a person of much distinction in his profession. Senhor M. V. Pereira is forty-two years old, is President of the Medical College of Bahia, and before his present promotion held the office of Vice-President of the Republic.

By the will of the late Mrs. James C. Loomis of Bridgeport the Bridgeport Hospital will receive a legacy amounting to about \$180,000.

Both Houses of the General Assembly of Connecticut have passed a resolution suspending the operation of the Bovine Tuberculosis Law of 1895, and directing the Cattle Commissioners to release any quarantined cattle until further action of the General Assembly.

The budget of the Prussian Government has appropriated 50,000 marks for the investigation of the Röntgen rays. sum is divided into a number of special appropriations and is to be used for apparatus.

According to the official report issued on January 28th there have been 4,396 cases of the plague in Bombay and 3,275 deaths have been recorded. At Poonhar there have been 65 cases and 60 deaths. A few cases have occurred at Lurat, Barod and other places.

#### PRACTITIONERS REGISTERED MONTH ENDING FEBRUARY 18.

Name. Harry G. Anderson, M.D., Wm. Stewart Reoch, M.D., Donald T. McPhail, M.D., Arthur M. Pratt, M.D., Henry C. Ide, M.D., Sue Radcliff, M.D., Wm. S. Kingsbury, M.D., Maurice F. Linquist, M.D., Walter Bergwall, M.D., Raffaele Guidone, M.D., Clifford S. Page, M.D., Amasa D. Chaffee, M.D., George G. Shelton, M.D..

Basis of Registration. Where Registered. Coll. P. and S., Col. Univ., N. Y., Waterbury Hartford Medico-Chirurg. Coll., Phila., Greenwich Bellevue Hosp. Med. Coll., West Cornwall Edward R. Lampson, Jr., M.D., Coll. P. and S., Col. Univ., N. Y., Greenwich Bellevue Hosp. Med. Coll., Woodstock Woman's Med. Coll., Baltimore, Greenwich Med. Dept., Yale Univ., Glastonbury Eclectic Med. Coll., N. Y., New Haven Lund Univ., Sweden, Hartford Univ. of Naples, Waterbury Med. Dept., Yale Univ., Danbury Coll. P. and S., Col. Univ., N. Y., Greenwich N. Y. Homeop. Med. Coll. and Hosp.,

# MEDICAL SOCIETY REPORTS.

REVIEW OF MEDICINE IN CONNECTICUT DURING THE PAST YEAR.

Though it would be presumptuous for us to attempt an exhaustive resumé of medical affairs in Connecticut during the past year a review of the most important work done cannot fail to prove valuable, interesting and suggestive.

Every one of the County medical associations in the State held meetings in the Spring, accounts of seven of which were printed in the JOURNAL. Fairfield held its meeting at Bridgeport April 14th; Hartford April 15th at Hartford; Litchfield April 28th at Litchfield; Middlesex April 28th at Haddam; New London April 2d at New London; Windham April 14th at Putnam, and New Haven April 16th, at New Haven.

The papers read were: At Bridgeport, "A Porro-Cæsarian Operation for Pregnancy Complicated with Fibroid of the Uterus," by N. E. Wordin, M.D., of Bridgeport; "Extra Uterine Pregnancy," by R. Lauder, M.D., of the same place; a talk on "The Practical Hints in the Diagnosis and Treatment of Skin Diseases," by George Henry Fox, M.D., of New York, and "Parasites in Carcinoma," by C. F. Craig, M.D., of Danbury. At Hartford a paper on "Graves' Disease," by F. T. Simpson, M.D.; "Some Remarks on Appendicitis," by Chas. E. Taft, M.D.; "Excision of the Tongue," by M. Storrs, M.D. (all of Hartford), and "A Proposed Home for Incurable Children," by T. W. Wright, M.D., of Plainfield. At Litchfield a historical sketch of the Society by J. C. Kendall, M.D., of Norfolk. Haddam "Abdominal Massage in the Treatment of Certain Uterine Diseases," by K. C. Mead, M.D.: "How Shall Testamentary Capacity and Criminal Responsibility be Determined by Our Courts," by J. F. Calef, M.D., of Middletown; "Notes on Goitre and Thyroid Feeding, by F. K. Hallock, M.D., of At New London a paper on the "Technique of Appendicitis," by M. M. Johnson, M.D., of Hartford. At Putnam reports and discussion of cases. At New Haven "Limitations of Contagious Diseases, Especially Scarlet Fever and Diphtheria," by F. W. Wright, M.D.; "Etiology and Pathology of Cancer," by C. J. Foote, M.D.; "Cancers of the Chest and Abdomen," by Prof. Wm. H. Carmalt, all of New Haven.

On May 27th and 28th the State Medical Association convened in the city of New Haven. Dr. Rienzi Robinson of Dan-

ielson was elected President and Ralph S. Robinson of Thomaston, Vice-President. Amendments to the Medical Practice Act were proposed to the effect that no person, a graduate from whatever medical school, can practice without a certificate from the Examining Committee of the State Medical Society, and that all fines for violation of health laws be paid to the State instead of being divided as is now done between the complainant and the State.

The papers read at this meeting were "A Suggestive Case of Epilepsy Followed by Recovery from Trauma-Trephining," by W. W. Hawkes, M.D., of New Haven; "Patients or Criminals -Which?" by Pres. Seth Hill, M.D., of Stepney; "The Diagnosis and Treatment of Apoplexy," by F. T. Simpson, M.D., of Hartford: "The Treatment of Diphtheria with Antitoxin Serum in Private Practice," by F. W. Wright, M.D., of New Haven; "Notes on Goitre and Thyroid Feeding," by Dr. Hallock of Cromwell; "The Technique of Removing the Appendix Vermiformis," by Dr. Johnson of Hartford; "Abdominal Massage in the Treatment of Certain Uterine Diseases," by Dr. Kate Mead of Middletown, which four last papers were read in substance at preceding County meetings. Besides these there were "The Physician as a Sanitarian," by R. S. Goodwin, M.D.; "Some Practical Hints of Country Medical Life," by F. H. Wiggin, Under "Progress of Surgery," H. G. M.D., of Litchfield. Howe, M.D., of Hartford, reported that but few new methods of surgical procedure have been carried out during the past year except in brain surgery.

In the Fall the Middlesex County Medical Association met, October, 8th at Killingworth; Litchfield October 13th at Litchfield, Fairfield, October 13th; at Stamford; New London October 1st, at New London; New Haven, October 15th, at Waterbury,

The paper read at Killingworth was "The Lancet: Its Uses," etc., by A. J. Campbell, M.D., of Middletown. At Litchfield a paper was given on the celebration of the fiftieth anniversary of demonstration of anæsthetics in surgery, followed by discussion of "Treatment of Typhoid Fever." At Stamford "The Physician and the State" was read by W. H. Donaldson, M.D., and "Electricity as Applied to Medicine," with X-ray demonstration, by Frederic Schavoir, both of Stamford. At Hartford the two papers, "Our New England Stomachs: Their Trials and Tribulations and Relation to Disease," and "Posture in Labor" (which have appeared in the Journal), were read by G. C. Jarvis, M.D., and E. J. McKnight, M.D., of Hartford, respect-

ively. In addition H. G. Howe, M.D., gave "A Year's Work in Abdominal Surgery at the Hartford Hospital." At *Waterbury* F. W. Wright, M.D., of New Haven, and Dr. Axtelle of Waterbury, discussed serum therapy and diphtheria, and Gustavus Eliot, M.D., of New Haven, read a paper on "Migraine."

At all these meetings discussions on papers took place, and when possible specimens were exhibited to add to the interest of the occasion. Matters bearing on medical welfare in the State received due attention in the various meetings, and resolutions were passed or other action taken showing their mutual interest and good fellowship. Numerous delegates were sent from one society to another within the State. Tidings were brought from and sent to other States and to the national meeting by them. The list of papers shows, if nothing else, that the profession has kept abreast of the times, and the discussions, if they could be given, the exhibitions of the X-rays, etc., would only go further to strengthen such a conviction.

Besides the regular meetings, a meeting of the Litchfield County Medical Association was held at *Thomaston* at which R. S. Goodwin, M.D., spoke concerning Jenner's work of a hundred years ago, and F. H. Wiggin, M.D., of Litchfield, spoke upon retro-displacements treated by vaginal fixation and detailed cases of the same. At the Summer meeting of this society it is customary to have invited several distinguished visitors. This example could well be followed elsewhere in the State since this one thing is, it is reasonable to suppose, largely responsible for the late vigorous growth of this association.

Through the city medical association meetings much in the way of valuable reports, discussions, etc., transpires; space will permit the mention of but one during the year; i. e., the fiftieth anniversary of the founding of the Hartford Association held October 26th. An introductory address was delivered on this occasion by the President, Dr. Storrs, in which he briefly sketched the past of the society, paying a pleasing tribute to Dr. Gurdon Russell who is now the sole survivor of the founders. Dr. Russell gave the "Historical Address." "Our Deceased Members and Incidents Connected with the Later Years of the Society," was given by Dr. Fuller, and "Esprit de Corps," by Dr. H. P. Stearns. This society is now building a home wherein its work can be forwarded under the best possible conditions.

Such meetings are to be most highly commended. They stir up professional pride, recall and emphasize its prestige, center interest, and unify purpose. The Litchfield County Association, it might be said in passing, at its last meeting found much invigoration and stimulation from a similar historical meeting.

The bulletins of the Secretary of the State Board of Health show that the total number of deaths for the past year was 14,-725-507 more than for the preceding year and 504 more than for any one of the preceding five years. The death rate was 15.6 for the large towns, 17 for the smaller, and 15 for the whole The third quarter of the year showed very naturally the most deaths, the second following with 900 less deaths. milder contagious diseases, whooping cough and measles, the latter increased gradually from the beginning of the year until May, when it rapidly fell off until September. In some places it was very prevalent-notably (in February) at Farmington, where it was epidemic. The greatest mortality was noted in April in the cities of Hartford and Waterbury. cough was much more constant during the whole year, reaching the maximum of mortality in the same months as measles. Among the more serious infectious and contagious diseases La Grippe claimed one or more victims every month except September, mostly in Hartford and New Haven. Scarlet fever mortality and cases also varied little for the whole State until November. In New Haven it then increased, however, very rapidly during the months of both November and December. Diphtheria and Croup (which is a most unfortunate classification) ran in sum total for the entire State almost coincident with scarlet fever until a rapid increase came in November due largely to its prevalence in New Haven. But the monthly mortalities of diphtheria, etc., gave great differences, unlike that of scarlet fever, showing either poor diagnosis or greatly varying degrees of malignancy. Diphtheria, too, showed a greater tendency to remain in cities. Typhoid fever did not rise to the proportions of an epidemic outside of New Haven, and the mortality here was low. For instance, 68 cases reported in August and 47 in September gave only nine deaths. Most of the few cerebrospinal cases came from the country districts from which most of the uncertain diagnoses are also apt to come.

# ALUMNI AND SCHOOL NOTES.

The First Division of the Junior class who are taking bacteriology started work on Saturday, February 13th. The course will last about five weeks. The Juniors in this division are A. H. Hine, F. W. Hulseberg, J. H. Hurst, W. W. Markoe and W. R. Munger.

Dr. Stearns of the Medical School gave expert testimony on insanity for the State at the Kippe murder trial recently held in this city.

Dr. Herbert E. Smith and Dr. M. C. White were both called as expert evidence in the Faber poisoning case tried the first week in February.

Dr. Fitz of Harvard visited Yale recently to inspect the Yale Infirmary, with a view to obtaining suggestions for an infirmary to be built soon at Harvard.

- 1880. Jay W. Seaver read a paper on "The Physical and Mental Growth of Boys" at the February meeting of the Society for the Advancement of Physical Training of Hartford, Conn.
- 1891. Clarence E. Skinner, M.D. (incorrectly reported as Clarence E. Spenser, M.D., in the February number of this journal) had an article on asepsis and antisepsis in childbirth and puerperium in a recent number of the New York Medical Journal.
- 1893. John A. Hartwell, M.D., is a graduate of the Presbyterian Hospital of New York City instead of the New York Hospital, as reported in the February number of this journal.
- 1896. Dr. Harry H. Hartung, who has been for the past six months at the Berlin University, also taking numerous private clinics, has received an appointment to the Royal Hospital for Women at Munich, under the noted Prof. Dr. F. von Winckler, to take effect April 1st.
- 1896. J. S. Maher, M.D., has an appointment for one year from January 1, 1897, at the St. Joseph's Hospital of Yonkers, New York.
- 1898. C. B. Brainard is slowly recovering from a severe attack of pneumonia at his home in Bristol.

- 1898. H. G. Watson has been elected President of the Gymnasium Hand-ball Club. This club numbers among its members: Hurst, Rowland, Perkins, Hulseberg and Watson.
- 1899. E. F. Hamlin is a promising candidate for the University base-ball team.
- 1900. J. J. Dunleary and D. J. Dore are training with the candidates for the Freshman team.
- 1900. Geo. L. Buist has been awarded a diploma by the directors of the Yale Gymnasium as a testimonial of his proficiency in gymnastics. This diploma is the Heaton Testimonial given annually for the best all-around gymnast.
- 1900. C. W. Field is training with the University track team.

### BOOK REVIEWS.

American Year Book of Medicine and Surgery, 1896. Under the editorial charge of George M. Gould, M.D.

We regret that the review of the 1896 edition of this work was unintentionally overlooked. A thorough review at this late date would be superfluous. The immense success of the work is a satisfactory and sufficient criterion of its merit. We do not know of any single volume that contains so much valuable information to the practitioner as this Year Book. All the latest and greatest advances in medical sciences, with their results are compiled in an available form. It occupies as necessary a place in the medical library as in a surgery, and no practitioner who attempts to keep abreast of the times can afford to be without it.

System of Surgery. Edited by Frederic S. Dennis, M.D., assisted by John S. Billings, M.D. Vol. IV. Lea Brothers & Co., New York and Philadelphia, 1896.

To be fairly assigned to its proper place among the multitude of surgical works which are constantly appearing, each new claimant for the attention of the profession and the dollars of its practitioners must be duly examined from two points of view. First, we must consider the vehicle through which the matter under consideration is conveyed to the reader; secondly, the teaching and spirit of the book itself. In no form of literature is the relative importance of these two elements so evenly balanced as in a didactic work of the kind before us.

It is a conviction gained from a careful perusal of the book that with few exceptions the more valuable matter is presented to us in those articles of the System which are at the same time freest from typographical, rhetorical and anatomical blunders.

The first article in the book by the editor of the "System" is no exception to the rule. It presents an exceptionally clear and comprehensive review, and a new and most commendable classification of the whole subject of neoplasms. The latter part of the article, dealing more especially with the microscopic structure of tumors, by Dr. Edward K. Dunham, is a most worthy conclusion to a careful and painstaking piece of work. One paragraph, on page 121, may well be quoted in full as it contains a most pregnant and apt suggestion regarding the early cachexia of cancerous disease as opposed to the tardy cachexia in cases of sarcoma.

"The cachectic condition is most marked in cases of carcinoma, and is probably due, at least in part, to the production of toxic substances by the cells of the neoplasm, which after absorption exert an injurious effect upon the general nutrition of The essentially active cells of the carcinomata are epithelial and, since epithelium in its normal situations is one of the tissues displaying the greatest metabolic or chemical activity, it is reasonable to believe that in the abnormal site wh ch it occupies in a cancer, it retains these intracellular activities, without the opportunity to discharge the products of those activities upon a free surface. They must, therefore, be In these days when it seems probable that the 'internal secretion' of glands has some influence upon the general welfare of the body, the foregoing hypothesis relative to the causation of the cancerous cachexia appears at least plausible."

The succeeding article by Drs. Bull and Coley on hernia is not of the same grade of merit as the first. The handling of the subject is incomplete and lacks the broad and yet decided treatment which the student seeks to guide him in the investigation of a somewhat perplexing problem, qualities which lend great value to some of the other articles in the work.

On page 189 the rights of the reader are sorely sinned against by an inexcusable typographical error in the description of the placing of sutures in Kocher's operation, where the text reads external by mistake for internal oblique. The mind of the average student after the first perusal of the most lucid possible description of the steps of a herniotomy is generally hopelessly lost in a tangled maze of anatomical terminology. Careful

proof-reading is the least he can expect from the writers whose pages he turns to guide him out of his chaos. Both the description of properitoneal hernia, page 193, and the otherwise good description of Bassini's operation, page 203, are similarly marred by misprints. It is hardly up to the mark to desert so completely the student who might be seeking advice on the operative treatment of ventral hernia.

The next article, the longest in the volume, on the "Surgery of the Alimentary Canal from the Pharynx to the Ileo-cœcal Valve," by Richardson and Cobb, is a remarkably good and thorough article. Special attention should be called to its valuable resume of the different methods of intestinal suture, though the description of Maunsell's method of invagination and suture is insufficiently elaborated.

The article on "Appendicitis" by Hartley suffers sadly when compared with its complement on the "Surgical Treatment of Appendicitis," by McBurney, which follows it. The anatomical descriptions while meant to be exhaustive are anything but clear. The whole article is obscure and badly written, even slovenly; it contains, however, some valuable matter on the differential diagnosis of different types of appendicitis and on pathology. The succeeding article by Dr. McBurney is all that could be desired, instructive, clear, and free from all irrelevant matter.

The editor was very fortunate in getting two successive articles of so much value as that of Dr. McBurney, above alluded to, and the next by Dr. Lewis S. Pilcher on the surgery of the "Alimentary Canal from the Ileo-cœcal Valve to the Anus." Dr. Pilcher's article is in every way excellent, well-written and thorough.

"The Surgery of the Liver and Biliary Passages," is the title of the next article by Dr. Robert Abbe. It is a sensible and instructive article, but not without some blemishes. Under the heading of "Choledochotomy," on page 570, occurs a rather startling anatomical solecism wherein the author recommends us to make "an incision of the peritoneum of the posterior wall" "from the cystic duct downward on the outer side of the duodenum" in order to extract a calculus from the ductus choledochus. The layer of peritoneum which should be incised is the anterior laver of the omentum minus. Behind this layer there are vet two layers of peritoneum before we reach the "posterior (abdominal) wall." "Incision of the peritoneum of the posterior (abdominal) wall" would bring us upon the renal vessels and the vena cava and not upon the ductus choledochus, duodenum and pancreas, as there set forth.

The subject matter of the excellent article by Dr. Polk on "Surgical Disorders and Diseases of the Uterus," is open to criticism on two or three counts, which may be summed up in the statement that the writer does not always bear in mind that he is addressing the general surgical practitioner rather than the gynecological specialist. The value of the article is much enhanced by the careful study of the vascularization of the uterus and by the excellent colored plates which accompany it. The recommendation to tie the anterior branch of the internal iliac artery in certain cases of hysterectomy is a most valuable suggestion. The statement, page 622, that "pain is a constant companion of fibroid tumors" would hardly be accepted by many without further modification.

On the whole the discussion of the treatment of uterine fibroids is eminently lucid and fair.

The article on "Minor Gynecological Surgery," is in some respects the most important gynecological article in the book, as being the one, on diseases of its class, the readers of such a work would be likely to wish to refer to most frequently. The greater is the pity that it not better written. In aiming at conciseness the writer leaves many of his descriptions of operations, particularly those on the perineum, so obscure as to be of but little service to the reader. The rest of the article, which is not without occasional merit, bears a heavy burden of blunders and errors in typography and rhetoric, and especially in the description of anatomical relations.

Of a totally different stamp is the masterly and exhaustive article by Wm. T. Lusk, M.D., on "Symphysiotomy." The article is beyond praise. An article on the "Diseases of the Female Breast," by the editor, closes the volume and the whole work, with the exception of a brief quasi-appendix on the X-rays. It is a pity that the same care in the classification of the subject matter and the same lucidity of description do not characterize this article of Dr. Dennis to the same extent as they do the opening article of the volume by the same author. A recasting of the subject matter with more careful distribution of captions and headings would make the article much more valuable. The anatomical plates XII., XIII. and XVII., from Testut and Cooper, lose greatly in value from want of at least a brief descriptive legend.

Whatever may be the merits of Halsted's operation as an

operation the description of it, quoted verbatim from Halsted, is contradictory, blundering and extremely obscure. The scalenus tubercle is described as part of the clavicle instead of as a part of the first rib. In sec. 1 we are directed to "complete the skin incision everywere at the start," and in sec. 4 we are presently directed to "divide pectoralis muscle and skin overlying it hard up to the clavicle." The lettering on Halsted's diagrams is almost undecipherable. These lapses might be pardonable in a communication to a periodical; in a didactic work on surgery they are not. In the discussion of mammary cysts, inasmuch as the author does not differentiate practically between connective tissue cysts, page 933, and serous cysts, page 934, he would have done better not to multiply his types of cysts.

However, "quandoque bonus dormital Homerus." Dr. Dennis has brought a vast undertaking to a successful finish. He has produced a work of much value that the student and the practitioner alike may turn to, on the whole, with satisfaction, and rarely fail to find sufficiently ample and explicit directions for whatsoever surgical work they may be called upon to perform, and find them stated, for the most part, in a clear, logical and tangible manner. There can be but few men in the profession whose surgical knowledge is so extensive that they cannot materially add to it by familiarizing themselves with the contents of this work.

L. W. B., JR.

# **BOOK NOTICES.**

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City, in twenty volumes; Volume X., Diseases of the Nervous System. William Wood & Co., New York.

Anomalies and Curiosities of Medicine. Being an Encyclopedic Collection of Rare and Extraordinary Cases, and of the most striking instances of Abnormality in all branches of Medicine and Surgery, derived from an exhaustive research of Medical Literature from its origin to the present day, abstracted, classified, annotated and indexed. By George M. Gould, A.M., M.D., and Walter L. Pyle, A.M., M.D. Imperial octavo, 968 pages, with 295 illustrations in the text, and 12 half-tone and colored

plates. Philadelphia: W. B. Saunders, 925 Walnut street; 1897. Prices: cloth \$6 net, half morocco \$7 net. Sold only by subscription.

Autoscopy of the Larynx and the Trachea. (Direct Examination without mirror.) By Alfred Kirstein, M.D., Berlin. Authorized translation (altered, enlarged and revised by the author) by Max Thorner, A.M., M.D., Cincinnati, O., Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery; Laringologist and Aurist, Cincinnati Hospital, etc. With twelve illustrations. One volume, crown octavo, pages xi.-68. Extra cloth, 75 cents, net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry street, Philadelphia; 117 W. Forty-second street, New York; 9 Lakeside Building, Chicago.

The Physician's Vest-Pocket Formula Book, published by Mc-Kesson & Robbins, will be found very useful to the practitioner. It contains a table of weights and measures, antidotes to poisons, various tables of reference, and a very complete series of tables, showing the composition of foods and alcoholic liquors. These tables should prove valuable to the physician in cases where special attention to dietary is necessary. The book also contains an extended series of notes on some of the new pharmaceutical preparations and a complete list of formulæ of the McK. & R. Gelatine Coated Pills. A copy will be sent free of charge to any of our readers on application to McKesson & Robbins, 91 Fulton street, New York.

The Diseases of the Stomach. By Dr. C. A. Ewald, University of Berlin. Translated and edited with numerous additions from the third German edition by Morris Manges, A.M., M.D.; second revised edition. D. Appleton & Company, New York, 1897.

A Manual of the Practice of Medicine Prepared Especially for Students. By A. A. Stevens, A.M., M.D. Fourth edition, revised and enlarged; illustrated. Philadelphia: W. B. Saunders, 1896.

Elementary Bandaging and Surgical Dressing. With directions concerning the immediate treatment of cases of emergency. For use of dressers and nurses. By Walter Pye, F. R. C. S. Revised and in part remitted by G. Bellingham Smith, F.R. C.S. Seventh edition. Philadelphia: W. B. Saunders, 1897.

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# SURGICAL CLINIC AT BELLEVUE HOSPITAL, JANUARY 11TH, 1897.

By Frederic S. Dennis, M.D.,
Professor of Principles and Practice of Surgery,
Bellevue Hospital Medical College. New York.

Gentlemen: In accordance with my plan of teaching I shall invite your attention this morning to a further consideration of the subject of "The Surgery of the Chest." The clinic will be illustrative of my didactic lectures which have been delivered during the past week. At the last clinic it was my privilege to show you a large number of cases illustrating the malformations of the chest, both congenital and acquired. Among the former you recall the deformity of the chest due to mitral disease, and another the result of non-closure of the foramen ovale. Among the latter you remember the cases of deformity of the chest due to rachitis, Pott's disease, chronic pneumonia, tumors. of the mediastinum, also two cases of acquired deformity, the If your memory serves, you can likewise result of aneurisms. recall the several deformities due to empyema and finally many cases of deformity of the chest in children. I also presented eight cases of fluid in the pleural cavity, some of which were due to a simple pleurisy with effusion, and others to purulent effusions or empyema.

The traumata of the chest have been considered in a previous clinic at which time I presented to you cases of fracture of the ribs and sternum, also gun-shot wounds of the lung and the mammary gland. Commotio-thoracica has also been discussed, and I called your attention to the fact that Riedinger has described at length this condition, which in the chest in many respects is similar in the head to contusion of the brain. In the

first case of simple effusion you remember that the operation of thoracentesis was performed and a large quantity of fluid was withdrawn, a culture from which was made by Dr. Brooks of the Carnegie Laboratory. The result of that examination has demonstrated the presence of the diplococcus of pneumonia, which you observe in these culture tubes. I cannot emphasize too strongly the advantages to be obtained from a bacteriological examination of the fluids withdrawn from the chest. nosis is favorable in this case because the cultures show that the presence of the fluid is due to this special form of bacteria. trocar and canula should never be used in the chest, because the fluid will only make its exit as long as the pressure within is greater than the pressure of the atmosphere without. soon as an equilibrium is established no fluid will flow unless the patient coughs. For this reason and also on account of the greater danger of infection aspiration is to be preferred. desire to also impress upon you the clinical fact that even aspiration, trivial as it may seem, is not unattended by danger. certain cases the diaphragm, the abdominal viscera, and the lung have been wounded. Collapse may occur from loss of intrapleural pressure or œdema of the lung may be established, a condition referred to by Terillon as "Expectoration albumineuse." This serous cedema of the lung accompanied by albuminous expectoration described by Terillon is an alarming condition. It may follow the administration of an anæsthetic and cause death.

In cases where aspiration has been performed the cause of the ædema is due to the too rapid pulmonary expansion, accompanied by vasomotor changes in the capillaries of the lung, a condition which permits an escape of the serum of the blood into the alveoli. Terillon collected twenty-one cases of death from this cause after aspiration. In two of the twenty-one, death occurred at the time of the operation, and in the remaining a few hours after the aspiration. It is not my object in calling attention to these dangers in aspiration to embarrass you in your work or to discourage you in your practice, but simply to put you on your guard, for many a human life is saved if danger is anticipated and everything is in readiness for immediate use. Delay in administering proper stimulants because they are not available for instant use, or neglect to provide against such unexpected complications explain many deaths which prompt action and skillful foresight might avert.

To return now to the special germs which cause pleural effu-

sion. It is a peculiar fact that while the pneumococcus is concerned in the development of pneumonia, that this same germ will cause an inflammation of the pleura accompanied by a purulent effusion. It is also a peculiar clinical fact that while the streptococci and the staphylococci are concerned in meningitis. in cellutitis, or even in an ordinary phlegmon, these same germs may likewise be the etiological factor in a pleuretic purulent effusion. The influenza bacilli have also been the cause of an The same can also be said of the tubercle bacillus which under certain conditions may become a pyogenic germ. The typhoid bacillus has been demonstrated by Welch to be a factor in the etiology of suppuration within the pleural cavity. The bacillus coli communis, which has its habitation in the intestine even in health, may likewise be the cause of appendicitis or peritonitis. While this is true, yet the surgeon must bear in mind that serous exudation in the pleura and other serous membranes may exist without the presence of bacteria. In these cases the exudation is supposed to have a tubercular origin in from 40 to 80 per cent of the cases, or the effusion may be a simple transudation. The tendency of a sero-fibrinous exudation in which are found the streptococcus pyogenes is toward a purulent effusion. This condition is found more frequently with the streptococcus pyogenes than with the pneumococcus. In nearly all purulent exudations, however, bacteria are found, and this is the case even in connection with the typhoid bacillus.

Netter has demonstrated that in one hundred and nine cases of empyema the streptococcus was present in 44 per cent of the cases, and the pneumococcus in 26 per cent while the mixed infection consisting of the streptococcus and the pneumococcus was present in only 3 per cent of the cases of empyema, leaving about 25 per cent due to the bacillus tuberculosis. demonstrated that the pneumococcus is far in the ascendant in children, and the streptococcus in adults. It is inferred therefore, from these facts that a sero-fibrinous pleuritic exudation may occasionally exist irrespective of bacteria, and that a serofibrinous pleuritic exudation may result from a lobar pneumonia, and finally that this exudation may develop with a tubercular origin. The mortality in the pleuritic effusion with the streptococcus is higher than when the effusion is due to the presence of the pneumococcus. The prognosis is most grave when the tubercle bacilli are found in the exudation.

The second case was one from which I drew bloody fluid

told you at the time that bloody fluid (excluding all forms of traumatism of the chest) indicated either a tuberculous condition or else the presence of malignant disease. The cultures in this case demonstrate the presence of the bacilli tuberculosis and the prognosis is therefore most unfavorable. Some time ago I saw a patient in whom several ounces of bloody fluid were taken from the chest, and the patient died in a few hours. The autopsy demonstrated the presence of carcinoma of the pleura.

A few weeks ago I tapped in your presence a case of fluid in the chest and Dr. Brooks found before the patient left the clinic by a microscopic examination, hooklets indicating the presence of tænia echinoccocci. Since that time I have operated upon this patient and found an hydatid cyst of the liver the fluid from which had forced its way upward and ruptured the diaphragm and penetrated into the lung. The sputum also contained hooklets. I saw the patient a few days since and found fluid in the pleural cavity the result of a transudation, but the effusion contained no hooklets. This is another illustration of fluid in the pleural cavity in which the cause is the result of an irritative lesion and not to the presence of bacteria.

Besides pleural effusions the result of irritation from an hydatid cyst there are observed other cases due to spirilla, also to aspergillus and "mycelial growth with conidia," and finally from amœba coli from abscess of the liver. Actinomycosis of the liver has also produced a pleural effusion according to Shattuck.

There still remains to be considered another kind of fluid in the pleural cavity in order to complete the list. This fluid when withdrawn is milk-like and coagulates into a firm clot. in the pleural cavity is termed chylothorax. In these cases there has occurred a wound of the thoracic duct and chyle flows into the pleural sac. Stab wounds of the neck have caused a perforation of the duct. A wound of the duct has also been caused by a deep dissection of the neck for the removal of a tumor. Chylothorax has also been reported from rupture of the duct due to ulceration the result of impaction, or to malignant disease. The treatment consists in withdrawing only enough chyle to relieve dyspnœa and leaving the rest to cause pressure to mechanically close the opening in the duct. If this does not occur death by inanition is certain to follow.

The next case of empyema which was tapped at the last clinic contained the streptococci, and cultures have been made from that fluid. The prognosis in that case is not so good as in

the one due to the pneumococcus but better than the one with the tuberculous bacilli.

The remaining cases of empyema are due to either the pneumococcus or to the bacilli tuberculosis or to a mixed infection.

These eight cases of fluid in the pleural cavity naturally direct attention to the proper operation for their relief. In the the event of failure after three weeks of medical treatment or in case the fluid has reached the level of the third rib, or the respirations are embarrassed, the withdrawal of the fluid should be undertaken. The surgical treatment of these affections varies according to the character of the fluid, and consists of thoracentesis, thoracotomy, and thoracoplasty.

Thoracentesis is an operation the object of which is to with-draw fluid from the pleural cavity by the introduction of an aspirating needle, a trocar and canula, or a special instrument called an aspirator. As a rule thoracentesis should be employed in preference to other operations unless the diagnosis of pus is absolutely certain, since Ashhurst has shown that if a mistake in diagnosis has been made the risk attending thoracentesis is much less than that of thoracotomy or thoracoplasty. The signs and symptoms of effusion into the pleural cavity vary somewhat according to the nature of the causative affection and the character of the fluid.

Acute hydrothorax may be due either to acute pleurisy with effusion, or it may be secondary to circulatory changes following disease of the heart, kidneys, etc. In the latter case it is a simple transudation, and is, as a rule, bilateral.

The following physical signs are common to both varieties of the affection: The intercostal spaces on the affected side are obliterated or may even bulge outward. In inspiration the affected side expands to a less extent than the sound side, and there is often absolute fixation. Increased mensuration on onehalf of the chest is indicative of a pleural effusion upon that side. The equality of measurement indicates that the dullness and other signs are due to some solidification of the lung or a compressed bronchus. On percussion there is dullness or flatness over the affected area; this dullness is movable, the upper limit being higher or lower, according to the position of the patient. The percussion-note just above the upper limit of dullness is often typanitic, to which fact Skoda has called attention. On ausculation the respiratory murmur is enfeebled as compared with that heard over the opposite side. When the layer of fluid is thin the breath-sounds may have a distinctly tubular quality, as suggesting consolidation rather than effusion; the voice sounds are distant over the dull area, sometimes having a bleating quality. Vocal fremitus is diminished, and in most cases lost. There is a lateral displacement of the apeximpulse of the heart; this is most readily made out in right-sided effusion. If the effusion be large, there may be displacement downward of the abdominal viscera. Adhesions may form between the two pleuræ, giving rise to circumscribed, sacculated, or encapsulated effusions. In cases of long standing there may be great thickening and adhesions of the pleuræ, so that, while the effusion may be reabsorbed, the thickened pleura may give rise to many of the physical signs of effusion and lead to an error in diagnosis. In such cases a preliminary exploratory puncture with a hypodermatic needle is absolutely essential. Where the effusion is purulent most of the physical signs given above are to be made out. The température curve is septic in character however; and chills and sweats with more or less cachexia are present. If the disease be of long standing, there are retraction and compression of the lung on the affected side, with deformity of the chest-wall. This latter may be very great in cases of long standing and in children.

Thoracentesis is indicated when the fluid collected in the pleural cavity is sufficient to embarrass the patient's breathing. In addition it happens occasionally that tapping is indicated when the fluid has not disappeared under proper medical treatment. In performing this operation strict attention must be given to every antiseptic detail in order to prevent a simple sterile effusion from being converted into a puru-The operation should be employed as soon lent one. as enough fluid has accumulated to cause dyspnœa, since under the circumstances of an early operation the lung is more likely to fully expand, the chest-wall to contract, and the altered relations of the lung, pleura, and chestwall, to become normal. Early thoracentesis also prevents permanent adhesions of the pleura. In children thoracentesis will often effect a cure, since the fluid is due to the presence of the pneumococcus, while in adults the fluid usually contains two or more kinds of pyogenic organisms, and the prognosis is not so favorable. In children no irrigation is indicated. tubercle bacilli with no bacteria of suppuration are found in the exudation withdrawn by a hypodermatic needle, aspiration is indi-There is no unanimity of opinion among surgeons as to the exact point at which to aspirate. Some recommend the fifth or sixth intercostal space in the axillary line, or at the eighth intercostal space in the scapular line.

Thoracentesis is an operation, the object of which is to withdraw fluid from the pleural cavity. To Bowditch of Boston is due the credit of having suggested exploratory puncture for the purpose of diagnosis. The fluid should be drawn with a good sized syringe, which is made thoroughly aseptic, and the contents subjected to microscopical and bacteriological examination. Upon the result of the examination the operation of thoracentesis, thoractomy or thoracoplasty is to be determined. dren simple aspiration often suffices; but in adults incision and drainage are to be preferred. Aspiration of the chest is always to be preferred to tapping the chest with a trocar and canula. Every possible antiseptic precaution should be rigidly enforced. Failure to carry out this technique endangers a human life, since the ordinary serous fluid may be transformed into a purulent one. The chest wall should be scrubbed with tincture of green soap and alcohol used freely over the chest wall to absorb the fatty and excrementitious material. The needle should be heated and the puncture made under continuous irrigation. The aspirator should be tested just before using it in order to be sure that it is in perfect order. No air should be allowed to enter the tube, and for safety the distal or discharging end of the tube should be immersed in a pitcher filled with sterilized water. It often happens that one aspiration cures the patient, but usually several aspirations are necessary.

The question of operation in empyema is one about which there are fixed rules to guide the surgeon. If the empyema is left alone death will ensue either from compression of the heart and lung or by an inflammation of the sacs surrounding these organs. The empyema may also destroy life by causing a peritonitis or septicæmia or even by giving rise to cerebral abscess. The clinical fact must not be overlooked that an empyema is more likely to burst into the lung than to point externally. has been demonstrated that the form of empyema that is most likely to burst into the lung is a small effusion contained within a limited area and following a pneumonia in a child. ally the empyema may burst into the pericardium or the œsophagus or perforate the central part of the diaphragm. disease is also likely to eventually cause death in empyema. indications for treatment are, first, to empty the sac; second, to drain it, and, third, to render aseptic the pleura, and, fourth, to permit expansion of the lung.

In this connection Bulau's operation, which consists of syphon drainage should be mentioned. This operation consists of introducting one end of a long drainage tube into the chest and allowing the other end to be immersed into some antiseptic fluid contained in a vessel which is placed at a lower level than the The method has the advantage of preventing the entrance of air into the chest and by suction force inducing slow The disadvantages of this operation are, expansion of the lung. that it is not entirely devoid of danger, that it is slow and often Thoractomy in purulent effusions is preferable because this operation relieves the pain, causes the fever to abate, permits the patient to breathe comfortably, affords an opportunity for the lung to expand, and the sac to become oblit-Early incision also prevents spinal curvature, deformity of the chest and amyloid visceral degeneration.

Thoractomy is a simple, easily performed and comparatively safe operation, and as a rule effects a cure in a fair percentage of the cases. If the effusion is purulent thoracentesis is not the best operation, but thoractomy is called for and consists of free incision and drainage or else free incision with a resection of a portion of the rib. The operation for the removal of pus from the It was described before pleural cavity is of very ancient origin. the days of Hippocrates. There are many historic accounts of thoractomy performed during the Hippocratic era and after reading a careful account of the operation it would seem that during the subsequent centuries but little has been added to the technique of the operation. Following the operations of Hippocrates thoractomy for over twenty centuries was little employed. At the time of Dupuytren the operation was practically abandoned, since he himself died of pyothorax and refused the relief which could have been given him and upon his death-bed made use of the expression "that he would rather die by the hands of God than of the doctors." The introduction of antiseptic surgery has made this operation one that offers a chance of permanent cure. While studying surgery in Berlin it was my privilege to witness this operation many times by the renowned Langenbeck, who trephined the rib in order to perfect the technique of the operation.

During the performance of thoractomy irrigation as a rule is contraindicated since many fatal results have followed this procedure. It was supposed that an embolus caused death; but this theory was not found tenable because no embolus was present at the autopsy. It was thought that the hemiplegia and death

were due to toxic poison, but death occurring when no disinfecting fluid was employed but simple sterilized water destroyed the value of this theory. In fact many other theories have been advanced too numerous to mention. In addition to the danger of toxemia in immediate irrigation of the chest, this procedure may cause hemorrhage from the cavity or it may break up adhesions too rapidly, or it may force its way into the lung or cause convulsion and death by syncope. I have recently seen a case of double pleurisy with effusion complicated with peritonitis and I aspirated both pleural cavities and the patient was greatly relieved from impending suffocation. In a few days following the double thoracentesis I performed a laparotomy and withdrew a large quantity of hæmorrhagic fluid from the peritoneal cavity. This was a case of general tuberculosis and the double aspiration and the laparotomy have greatly benefited the patient. Time only can determine the value of the operations as a means of saving this patient's life. Suffice it to say, the patient's temperature fell, his pulse was reduced in frequency. and, in general, his condition has greatly improved with a prospect of recovery.

Finally, the alarming fact that nearly thirty cases of sudden death have occurred from irrigation at the time of the thoractomy is sufficient reason to abandon this procedure. The danger of absorption of poison by the pleura in an irrigating solution must always be considered, since it has been demonstrated by Majendie that the pleura absorbs more quickly than the peritoneum. I have seen black urine in a case where only a small quantity of carbolic acid had been used upon the skin for the purpose of disinfecting it previous to a thoractomy. At the present time the theory which seems most plausible is that death is due to shock. If any irrigation is used during the operation it should be a warm solution of bichloride of mercury of the strength of 10000, to be followed immediately by an ablution consisting of a warm sterilized saline solution. Beck packs the cavity with long narrow strips of iodoform gauze and in this way causes absorption of the pus. performing a thoractomy too much stress cannot be placed upon the necessity of rigid asepsis. The axilla should be shaved and the chest-wall should be washed and scrubbed with green soap. after which some disinfecting solution should be employed to make the field of operation aseptically clean. The surface should be thoroughly washed with alcohol or ether in order to dissolve the fats from the skin and make it aseptic.

poultice can be applied the day before, which helps to render the parts sterile. Beck suggests the resection of a portion of the seventh rib in the mid-axillary line and employs a special pair of cutting forceps to accomplish this object.

Great care must be exercised lest the tube be lost in the chest—a calamity that has often happened and one that has been the cause of death. I have collected twelve fatal cases where the tube was sucked into the chest during inspiration and it therefore behooves the surgeon to anchor firmly the tube beyond all peradventure, and thus avert a most disagreeable and dangerous accident. Only a certain amount of the pus should be allowed to drain at once, because a too rapid withdrawal of the fluid is apt to cause a dangerous collapse. In general terms, not more than half of the fluid should be taken away at the time of the operation, and the rest allowed to drain slowly into an antiseptic gauze pad, which is changed from time to time under antiseptic precautions. No arbitrary rule can be given as to when the escape of the fluid should be arrested, the presence of coughing and a notable alteration in the pulse are signs indicating that the lung is expanding too quickly, and that the adhesions are being broken up too rapidly, for the future good of the lung or the immediate safety of the patient. In performing these operations the patient should be placed in bed in the semi-upright position, and should be immediately lowered to the recumbent position upon the appearance of coughing or a change in the character of the pulse. If after a while free drainage does not effect a cure it may be well to wash out the chest. The pleura is not now so sensitive as at first and the dangers are not so great when drainage has existed for some weeks. The fluid should be warm, and first consist of a bi-chloride solution of 10000 to be followed immediately by a sterilized saline solution. I will now proceed to wash out the chest in several cases this morning, in some of which a permanent cure can hardly be expected until a thoracoplasty is performed.

Thoracoplasty consists of removing as many ribs as cover the abscess cavity. It may be necessary to remove all the ribs from the second to the eighth, but generally a less number will suffice. The fact must be borne in mind that until the empyema cavity is mechanically obliterated, there is no prospect of cure. The tissue forming the lining membrane of the cavity should be curetted. Park has suggested irrigating the abscess-cavity with a 50 per cent solution of the chloride of zinc, and then permit the soft tissues to fall in and close the

cavity. There is no unanimity of opinion in regard to the best incision; some recommend a vertical one, corresponding to the mid-axillary line, others an horizontal one over the center of the rib, and still others a large flap incision like the letter U with its base upward. In resecting the ribs care should be taken to avoid wounding the intercostal arteries and to prevent the oozing from the curetted membrane. The ligature applied to the arteries and hot irrigation and pressure to control the oozing, will cause the hemorrhage to cease.

I have here this morning a patient upon whom Estlander's operation has been performed, and you will observe that several ribs have been excised and that the soft tissues have fallen inward to meet the partially compressed lung so as to obliterate the cavity which previously existed. There is a slight sinus remaining at one point, but this will soon close. The patient is now rapidly gaining in general health and has every prospect, as you can see, of soon becoming permanently cured.

Thoracoplasty is an operation devised for the cure of cases of chronic empyema. The operation has been called Estlander's operation. Simon of Heidelberg is said to have performed the operation before Estlander, but his death prevented him from claiming priority. It was my privilege to witness Simon's work while a student of medicine in Heidelberg, and great credit is due to him for the discovery of many ingenious operations. In this country the operation of Dr. Stone of New Orleans also antedated that of Estlander by several years.

The subject of anæsthesia in connection with thoracoplasty is of great importance. Ether is usually considered unsafe because it causes paroxysms of coughing. Chloroform is thought by some to be more safe in this operation, although its administration is attended with great danger. The patient must not be placed too much upon the sound side since this position is likely to embarrass the action of the heart and lung. Every cardiac stimulant, together with the battery and oxygen gas and a tracheotomy tube, should be at hand.

The surgery of the lung is most interesting since it is only recently that much has been accomplished in this new field of operative work. The lung is now invaded by the surgeon for the purpose of removing tumors, specimens of which I showed you in yesterday's lecture, also for gangrene of the lung, for tuberculous cavities, for abscesses and for the removal of foreign bodies. The technique of the operation consists of cutting down to the lung and if adhesions have formed to cut into the cavity

of the lung with the thermo-cautery knife following the direction of a needle previously introduced into the cavity. movement of the needle up and down with normal respiration is indicative of adhesions, but if the exposed part of the needle oscillates with the movements of respiration it clearly shows that the pleura has not formed adhesions and that the operation must be completed in two stages, the first of which consists of cutting down to the pleura and stitching it to the wound and waiting for a few days until adhesions have formed, the second of which consists in then opening into the cavity after the manner already described. The fixation of the pleura and lung to the external wound is often attended with great difficulty on account of the small opening through which the surgeon is obliged to operate and also on account of the extreme friability of the lung itself. Hernia of the lung is sometimes observed. I have here to-day a pneumocele the result of a stab wound. The patient was a captain in whose ship a mutiny arose. The mutineers killed five of the crew and stabbed the captain in five different places. With a revolver he overcame the ring-leaders who, when they were about to be captured, set fire to the ship and jumped into the sea. The captain and his wife with the survivors lowered a boat and drifted for seven days in the open seas and finally reached the Island of St. Helena. During these perilous days his lung extruded through the stab wound, but it was finally reduced when he reached The hernia still exists, and the air can be heard passing through this portion of the protruded lung over the swelling which is so prominent. Since his arrival here I have operated upon him with the favorable result which you see. The pure air of the ocean containing few if any bacteria explains the freedom from sepis in the protruded lung.

Hernia of the lung is rare since it occurred only seven times in over twenty thousand cases of wounds of the chest in the Civil War. No cases of hernia of the lung occurred during the Crimean War.

The surgeon must be careful not to mistake a hernia of the omentum for that of the lung. The history of the injury, the appearance of the protruded part, the respiratory movements, the presence of vesicular murmur and the characteristic resonance upon percussion, enable the surgeon to establish the diagnosis.

Emphysema is a condition to which I have recently called your attention. It is easily recognized. The skin is uplifted and crackles under pressure of the finger and the air escapes.

from the lung into the surrounding subcutaneous connective tis-It is not a condition that is often observed—only thirtyeight times out of 8,715 cases of penetrating wounds of the chest, are reported in the history of the Civil War. It is a singular fact that emphysema is less likely to follow gun-shot than bayonet or knife wounds. If the emphysema is not accompanied by a pneumo-thorax the prognosis is favorable. The air becomes absorbed and gives rise to no inflammatory condition, since the air having been filtered through the lung is aseptic. Emphysema from a wounded intestine must be differentiated at once from that proceeding from the lung, since in the former case an immediate Emphysema of the chest must also be laparotomy is indicated. differentiated from that variety which arises from decomposition of gas occurring in connection with a septic wound in compound fracture of the humerus. Under these circumstances a most radical operation is called for in order to make the wound aseptic. The treatment of ordinary pulmonary emphysema is simple, since non-interference is the rule, unless the air is so infiltrated as to cause dyspnœa, in which case free incisions are indi-Fortunately this step is seldom called for and should never be resorted to except under the distressing circumstances already mentioned.

I have now a patient to show you with a pericarditis with effu-He is evanotic, has a poor pulse, and his pericardium is distended with fluid so as to embarrass respiration and circula-It is a case suitable for paracentesis pericardii, since the fluid has forced the heart out of its normal place. There is present also pericardial oppression, cardiac syncope, dysphagia, varicose enlargement of the cervical veins, together with the ordinary physical signs present at this stage of the disease. friction sound above is most prominent and must not be mistaken for an endocardial murmur, which has a regularity of rhythm and is limited to the precordia. Percussion, as you observe while I tap over the sac, shows flatness, while auscultation reveals the presence of muffling of the heart sounds and loss of vocal resonance and of fremitus. The needle should be introduced at the fifth intercostal space, and two inches to the left border of the sternum. The needle should be thrust directly backwards and the fluid allowed to escape very slowly and the effects of the withdrawal of the fluid carefully watched. fluid is purulent, the empyema must be treated by incision and drainage.

In purulent effusion within the pericardium Roberts has

shown that 40 per cent of the patients have recovered after the operation of incision and drainage of the sac. Foreign bodies have been found in the pericardium, a beautiful specimen of which I showed to you yesterday where a plate of false teeth had been swallowed and lodged in the esophagus. The plate forced its way by ulceration into the pericardium.

It is only by grouping a large number of these cases, and exhibiting them in the order in which they were discussed in the didactic lectures, that the subject of chest surgery can be appreciated and made clear.

In conclusion I will, in addition to washing out two other cases of empyema, aspirate a patient that has just been admitted this morning. Finally, I will show you the apparatus for exercising the lung, and you see the patient blows the colored fluid from one jar into another and then back again, and by these pulmonary gymnastics expands his lung and breaks up the adhesions. This is the best way to cause the previously compressed lung to expand and to break up slowly but surely the adhesions which it has formed in consequence of the empyema.

I trust the presentation of these thirty or more cases of chest surgery in the clinic this morning, together with others at the next clinic, will impress the lesson of the importance of the subject, and make clear the points brought out in the didactic lectures during the past week, and will serve also to awaken an interest in this field of surgery which of late has yielded so many brilliant results in a class of cases which hitherto were doomed to a certain and painful death.

# A REPORT OF THREE DEATHS FROM HEAD INJURY.\*

By Frederick H. Baker, M.D., Medical Examiner,
Pathologist to the City Hospital,
Bacteriologist to the Board of Health, Worcester, Mass.

These three cases are reported to the Society, not on account of their rarity but rather for the reason that each has certain interesting and practical peculiarities, and still more for the reason that they, collectively, illustrate anew the well-known fact that fatal violence may be applied wilfully or otherwise to the head leaving externally little or no evidence of the intracranial damage which it has accomplished.

Medical examiners are not infrequently called to act upon cases of this character where the objective evidence is very slight and where, for obvious reasons, a truthful history is not given, and it is only by most rigid examinations and often by autopsy alone that we escape falling into grievous error.

Case 1.—I was summoned by the Police Department about 1 A. M., November 13, 1895, to investigate the cause of death of a young man, H. E. D., who had died suddenly upon the floor of a dance hall a short time before my notification. Upon my arrival I found a number of young men present around the body, all of whom could tell how he was picked up apparently in a faint, and carried to the window for air, but as to the cause of his being on the floor they claimed to be entirely ignorant. They freely advanced several theories as to the cause of death, such as "heart disease," "a fit," and the "bursting of a blood vessel in the head," but all denied that there had been any quarrel.

Upon examining the body two things only were noticeable—marked pallor and a slight swelling beneath the left eye, which his friends declared he received when he fell upon the floor, but a careful examination did not show any contusion or injury of the scalp.

Shortly afterwards it became known to the police that there had been trouble between the young man who lost his life and another young man named C. O'S., the quarrel starting from their pushing each other in their eagerness to reach the coatroom. They had been strangers up to this time, but after a

<sup>\*</sup>Read before the Massachusetts Medico-Legal Society, Boston, Oct. 7, 1806.

few hot words they stepped out into the dance hall, sparred a moment, when O'S. struck D. below the left eye, and when the latter bent over to seize his opponent by the legs, he was dealt another blow just above the left ear. He sank to the floor, dying in a few moments without regaining consciousness. Neither had been drinking.

The body was ordered to be removed to the City Hospital morgue, where I performed an autopsy about twelve hours after death.

Autopsy.—He was an exceedingly well built young man, aged 18; height, 5 feet 9 inches, weighing about 160 pounds. Rigor mortis was present throughout the body, pupils dilated 8 m.m. and equal. The discoloration about the eye was much more marked than at the time of the first examination.

Head.—Upon taking off the scalp, which was perfectly normal, there was found a contusion of the left temporal muscle, there being a rupture of its fibres with an infiltration of semiclotted blood over an area about the size of a cent, one inch directly above the external auditory meatus, apparently made by the knuckle of his antagonist. The skull was of normal There was no extra-dural hemorrhage, and the dura itself was normal, and on being removed two or three ounces of very reddish fluid (blood and cerebro-spinal fluid) escaped, and a thin clot of blood was seen spreading over the lateral surfaces of both hemispheres, dipping between the convolutions, especially over the motor areas, and extending downward toward the base where a large fresh clot lay over the Pons Varolii. also numerous small areas of extravasated blood in the pia mater and subarachnoid tissue away from the areas covered by the thin clot. It was not possible to find the vessels which had been ruptured nor, macroscopically, was there any laceration of the brain tissue. There was no rupture of the venous sinuses or fracture of the skull, nor did the blood vessels show any signs The brain substance and the ventricles were nor-The other organs of the body were normal. my routine custom in all autopsies, cultures were taken from all the internal organs but, as was to be expected in this case, with negative results.

The interesting facts in this case are (1) the suddenness of death; (2) that a strong, athletic young man should be killed by one or two blows given by a man of less than average strength and having no knowledge whatever of boxing; (3) that the blow which was probably the fatal one (the one over the ear), left no

mark externally. C. O'S. was arrested and indicted for manslaughter by the Grand Jury. As it had been ascertained that the deceased was the aggressor and that there were many extenuating facts in favor of the defendant, he was allowed his freedom on probation.

CASE 2.—This man, A. J., died as the result of a faction fight in the street between Swedes and Finns on the outskirts of Worcester on the evening of December 2, 1895. Parties of both nationalities were in a saloon drinking when the quarrel started. Reinforcements were wanted and the victim was summoned from his house near by and he had not been at the scene of the row. which was transferred to the street, more than two minutes when he was struck in the head by a stone thrown by someone in the crowd. Later at the inquest, evidence was given that showers of stones were thrown in the darkness by both sides, and it is doubtful if the man who threw the fatal stone was aware where it struck. The injured man walked back to his house and complained of severe pain in his head. However he went to his work the following day, but the pain growing more severe, he was obliged to quit work. The pain grew worse, a physician was called who examined his head carefully but did not find a mark of any kind upon the scalp or any objective signs of fracture. Four days later he became so wildly delirious that he required restraint and was sent to the hospital where he died the following day with all the symptoms of meningitis.

Autopsy (12 hours after death).—A Finn, height 5 feet o inches; weight about 180 pounds; rigor mortis very marked throughout the body. Another careful search failed to show any external mark of violence about the head. Upon removal of the scalp, I found a condition almost identical with that of case 1, viz., a normal scalp with a contusion of the right temporal muscle over an area of the size of a fifty-cent piece. Directly beneath this was found a linear fracture through the entire thickness of the skull without any depression, starting two and one-half inches directly above the external auditory meatus and running downward through the middle fossa and ending in the petrous portion of the temporal bone in the external auditory canal, in which was found a small clot of blood. The dura was not ruptured and appeared nearly normal. The brain revealed a most intense general purulent leptomeningitis, so marked over the area of brain around the seat of fracture as to conceal completely the gyri which were everywhere flattened. gitis was particularly marked also at the base of the brain.

ventricles were slightly distended with a purulent fluid which was not bloody. The brain substance was very slightly lacerated only at the point near the middle of the fracture. The corresponding part of the brain on the opposite side did not, macroscopically, show any evidence of laceration or contusion, nor did thin sections of the brain disclose any minute hemorrhages or other alterations. The only variation of the internal organs from the normal was what might be found in any case which had had a high temperature for a number of days. I made at the time of the autopsy cover slip preparations from the purulent exudate to determine the nature of the infection and found only one organism present, viz., the micrococcus lanceolatus. Cultures were taken from the various internal organs but they remained sterile showing that the infection was not a general one.

This case has certain peculiarities: (1) that a stone thrown with sufficient violence to fracture the skull through the base and lacerate the brain substance should leave no external mark of violence; (2) that he should be able to work with so severe an injury.

Numerous arrests followed his death but from the nature of the fight and the number involved, and the fact of the darkness at the time, there was not found evidence enough to hold any one for homicide.

CASE 3.—On Sunday morning, September 13th, I was called to the Worcester City Hospital, in my capacity as pathologist to that institution, to perform an autopsy upon a woman, A. H., who had died there the previous evening. Briefly the history given was that she had been drinking heavily the past few weeks, and, being ill, a physician had been called four days before her entrance, who sent her to the hospital as a case suffering from alcoholism. She was able to ride to the hospital sitting up in a hack, but appeared stupid. She had no paralysis whatever, and shortly after entrance she articulated perfectly in answer to inquiries. She got out of bed and stood up for a moment the day before she died. A few hours before death she became unconscious, her pulse became very weak, and Cheyne-Stokes respiration developed, this condition remaining to the The scalp wound was dressed antiseptically while in the hospital but its apparently insignificant character and the fact that she had no paralysis led to the belief that the cerebral symptoms were due to alcoholism.

Autopsy (12 hours after death).—A well developed woman aged 38 years; rigor mortis present. The only mark of violence about the body was a small lacerated scalp wound about one-

half inch in diameter and one and one-quarter inches above the external auditory meatus; the whole wound was slightly suppurating. Upon taking off the scalp it was found that the left temporal muscle beneath the scalp wound was perforated, and it was also found that directly beneath this was a clean cut circular hole in the temporal bone 9 m.m. in diameter. There were lacerations in the dura mater at this point, one hole being about as large as the perforation in the bone, the other a small one near it produced by a spicule of bone. The skull was slightly thinner than normal but not remarkably so. The inner table of the temporal bone was shattered and imbedded in the brain. At first sight it suggested strongly a bullet wound. a slight amount of clotted blood outside and beneath the dura at the point of injury but not so much as would be expected. brain was punctured opposite the tear in the dura and there was marked flattening of the convolutions over the whole left side. Just how far the brain was pierced could not be determined as a cavity was found in the subcortical brain substance beneath the point of perforation about the size and shape of a lemon, extending into the frontal lobe. It was filled with clotted blood and yellow softened brain tissue. The meninges were markedly engorged with blood but there was no evidence of suppuration. The other organs of the body were of normal appearance. tures from the organs were negative.

Upon finding these conditions at the autopsy, I immediately communicated with the Chief of Police who detailed detectives to investigate the case. This resulted in the arrest of the husband and a brother of the deceased. The brother confessed that one week before her death he had, during a wordy quarrel, struck his sister by making a lunge at her with an umbrella. The umbrella was obtained and found to have a metal tip which exactly fitted the hole in the skull. The brother apparently did not realize the extent of the injury at the time, nor did the injured woman, who ran down stairs, and was not confined to her bed until the following day.

This case is one where the absence of characteristic clinical symptoms of intracranial injury and the placing of too great reliance on the history given led naturally to diagnosticating the case as alcoholism. It was only from the fact that the husband gave permission to have an autopsy that led to the discovery of the real cause of death and the arrest of the assailant. He was subsequently sentenced to the House of Correction for the term of one year.

# THE TREATMENT OF EPILEPSY.\*

By Joseph Collins, M.D., of New York, Visiting Physician to the City Hospital, Attending Physician to St. Mark's Hospital.

#### (Concluded).

Medicinal Treatment.—In speaking of the medicinal treatment of epilepsy, I shall keep in mind a typical case of primary or congenital epilepsy, for these are the cases in which medicinal treatment is attended with any sort of success. It is also the kind in which success is most dependent upon medicine. As I have said before, I believe that the reason why so many cases of epilepsy under the care of the general practitioner are not very much benefited by treatment for all time is that although the prescribing of drugs may be unimpeachable, the mode of administration, the intelligent persistency and careful attention to the details hereinbefore mentioned are not combined with such exhibition of medicine.

Bromides the one Great Measure.—The one great measure in the treatment of epilepsy are the salts of bromine. If all other drugs which have a reputation as anti-epileptic remedies were lost to our profession the result of treatment by this measure alone would be as good as they are to-day. After a trial of nearly one-half a century (first used by Locock in 1851) it may be said that they are no longer on probation.

It does not seem to me that the selection of any particular salt of bromine is of such importance as to merit considerable discussion. By some, perhaps by the majority, bromide of potassium is considered the equal if not the peer of any of the other bromide salts. On the other hand, many prefer the bromide of sodium, not alone because it is more agreeable to take, but also because it is less apt to derange the stomach, and because of its greater percentage of bromine. On the other hand, bromide of strontium has been very successful in the hands of some practitioners. As a matter of fact, it is best to begin the bromide treatment of epilepsy with either the bromide of soda salt or the bromide of potassium, and if these are not well tolerated

<sup>\*</sup> Read before the New Haven Medical Society, February 4th, 1897.

or if they are not as efficacious as they should be, another salt of bromine or a combination should be tried. I have never been able to satisfy myself that a mixture of the bromides possesses any particular advantage over the individual salts, and, as Seguin has pointed out, the use of the single salt of bromide allows of the maintenance of a standard solution which can be used to great advantage.

Physiological and Toxic Effects of the Bromides.—In order to administer the bromides successfully the physiological action and the toxic effects of the bromides should be well in mind. It is not important, perhaps, to consider either of these here except incidentally. The common acute toxic manifestations of the drug are the eruption of acne on the skin, sometimes the production of very striking trophic changes going on ulceration; bromine inebriety characterized by vasomotor inhibition which may extend to very considerable vasomotor paresis with all its symptoms, such as cold extremities, clammy skin, slightly depressed bodily temperature and a lowering of the vital capacities; angry red or coated tongue; foul breath; loss of the palatal and pharyngeal reflex; stomachic catarrh; depression of sexual vigor; an unsteady gait, amyosthenia, particularly manifest in the legs; forgetfulness, slight degrees of aphasia, usually manifest by the misuse of words and terms, ordinarily called paraphasia; slowness of mental response, inability to coördinate the complex mental processes and often a considerable degree of dementia. In acute bromine poisoning the symptoms may develop so rapidly and be so severe that they simulate acute intracranial mischief, such as brain tumor.

The severe manifestations of bromism can be counteracted by the administration of restoratives, cardiac and vaso-motor tonics and drugs that have a special beneficial influence upon the skin; by facilitating the elimination of the bromine by the gastro-intestinal tract, secured by the administration of a briskly-acting purgative, and by the various hydro-therapeutic procedures with which every physician should be familiar. Very frequently an amount of bromide that would otherwise be toxic can by the utilization of these measures be administered without deleterious and disastrous results. The necessity for the continued use of the bromides to combat the frequency of epileptic attacks and also after the fits have ceased is conceded by all. The intermittent administration of bromides in large doses is to be deprecated unless the advent of some acute disease such as the infectious diseases make it advisa-

ble to materially lessen the dose, or cease its administration altogether so that the asthenia and asvenergia which occurs naturally as the consequences of these diseases be not added to; nothing can be gained in uncomplicated epilepsy by stopping the administration of the drug until the system has time to recuperate. This medicine can be administered to best advantage if some definite solution of the salt, such as a twenty-five or fifty per cent watery solution be used as a standard. It is impossible to say in grains what the dose of the bromide salt shall be. There is no more a "dosage" according to weights and measures, than there is of alcohol for a patient with typhoid fever. The dose is the amount he can dispose of. For one patient it may be a scruple, for another a drachm. It is necessarv to make individual study of each case. It is as ridiculous to say that the dose of bromide for an epileptic is a scruple four times a day as to say that the dose of morphine in peritonitis is one-fourth of a grain every four hours. No rational person would think of giving the latter directions, and no person who has had anything to do with the treatment of epilepsy would think of giving such instructions. The drug must be given up to the point of tolerancy, up to the completeness of its physiological action and the patient kept on this if it controls the attacks, if not, toxic effects must be produced, no severer than is absolutely necessary, and, at the same time, measures must be taken to prevent toxic manifestations from becoming dom-After the details of treatment have been arranged to the physician's satisfaction, he should study a chart made with the end in view of showing the frequency, time and character of the attacks. That is, whether they are matutinal, nocturnal or periodic, and whether they have any relation to the occurrence of a period function, such as that of menstruation, and whether they are petit mal or haut mal, and whether they are preceded by an aura. If the attacks are permanently matutinal the large dose of bromide should be given before the patient arises, and a similar plan should be pursued if the attacks are commonly nocturnal. In those cases in which there seems to be no definite time of the occurrence of the attacks, and in patients who are occupied during the day, it has become a kind of custom with me to administer a small dose of bromide in the morning, another during the afternoon, and a large dose This plan has the advantage that it facilitates sleep. while not producing sufficient stupor to interfere with the patient's waking time. If even with this plan of administration of the bromides, satisfactory results do not follow they should be withdrawn and some other anti-epileptic substitute employed. I desire to repeat that in my opinion the desultory and irrational administration of this medicament is worse than no bromide at all. Natural states such as pregnancy are not at all affected by the administration of bromine, nor is the fœtus, and during such states especial care should be taken by the use of anti-epileptic and hygienic measures to prevent the occurrence of attacks.

Seguin has pointed out the advantage to be obtained if the salt is given well diluted and in some alkaline water, such as vichy, and for poor patients water made slightly alkaline by the addition of bicarbonate of soda. The more liberally the dose of bromide is diluted, the better will be its effect.

Abuse of Bromide.—In this connection one word may profitably be devoted to the abuse of bromide. I know of no other drug with the exception of those that produce habits, such as morphine and cocaine, that is so enormously outraged as the salts of bromine are. If the truth be told, their application in disease is very limited and the disease under consideration is the only one that justifies the continuous, persistent administration of bromides in large doses. The plan which is so frequently pursued of prescribing bromide as a sort of pick-me-up, merits the same condemnatory language as that used by temperance advocates against the prescribing of alcohol. It is only necessary to see the colossal mental and physical depravity that sometimes results from the ignorant administration of this drug for minor ailments and sometimes even in epilepsy, to fully appreciate the truth of this statement.

The most important measure to overcome the severe acne and the state of general depression attending chromic brominism, aside from the maintenance and improvement of nutrition, by restoratives, hydrotherapy and attention to the kidneys, is some preparation of arsenic, preferably arseniate of soda, because, unlike Fowler's solution, this rarely deranges the stomach. It should be given in moderately large doses, and continued for a short time, one or two weeks, and then interrupted. If the symptoms of chronic brominism become dominant, the patient being pale, with dry, crisp looking mucus membranes, stuporous, forgetful, slow of breath and of heart, depressed, suicidal and emaciating, I have found opium a better stimulant than all of the others. It would seem to prevent the neural protoplasm from wearing itself out in futile endeavors

to overcome the rapid waste of the body and to stay the latter till rest and nutrition can pick them up.

The best all-round vaso-motor stimulant, stomachic and general restorative we have, is nux vomica, or its alkaloid, strychnia, which is advantageously given combined with dilute hydrochloric acid. When the toxic effects of the bromide are manifest particularly by inhibition of sexual vigor and of the vesical sphincter, belladonna is often of considerable service to obviate these conditions. Belladonna has in its favor that it of itself is considered no mean anti-epileptic measure. One of the most potent aids in the hands of the physician to prevent bromism and its terrible consequences, is hydrotherapy. A patient who loses weight and becomes anæmic, has lowered mental and physical vitality, is often started in the opposite direction if he is instructed to take a tepid or slightly cold plunge bath in the morning, followed by vigorous towelling, or a spray bath and blanket pack.

If it is possible these patients should now and then take a course of treatment in some hydriatic institute, these being now found in nearly every city of any considerable size. They may be substituted, however, with no mean advantage, if sufficient pressure can be obtained by the ordinary bath-tub, hose-pipe and special apparatus. Caution should be used in prescribing the cold plunge or the cold shower for these patients. The impaired vitality due to the administration of the bromide often prevents them from properly re-acting. If for any reason it becomes advisable to materially diminish the dose of bromide which the physician has determined is sufficient to hold the attacks of epilepsy in abeyance, I consider the plan which is safest above all others, of going to bed and remaining there until the usual dose of bromide can be administered, so far superior to all others that I urge its employment in every instance.

The headache which so often contributes to the patient's misery can often be materially ameliorated by the use of pressure, such as by large towel tied tightly around the head or by bag half filled with shot which will then conform itself to the skull.

Adjuvants to the Bromides.—The most important adjuvant to the use of bromides, in the author's opinion, is opium. The value of opium in some cases of epilepsy has long been common knowledge, but it was reserved for Flechsig, to point out as he did a few years ago, that opium administered in a certain way, for a short time in enormous doses, and followed by large doses of bromides, seemed to possess special value. I have given

this plan of treatment an extended trial and am an advocate of it in certain cases. In an article published on this subject three years ago, it seemed to me that in cases of idiopathic epilepsy which had become very chronic and in cases occurring in early life associated with such somatic and mental shortcomings that defect of the brain was indicated, that this plan had special efficacy. Further experience with it has confirmed my belief. The plan is to administer ordinary pulveris opii or its equivalent of the extract up to ten grains daily, the maximum quantity being reached as soon after the beginning of the administration as possible. The patient is kept on this maximum dose for six weeks, at the end of that time the opium is stopped abruptly and bromide of potassium or sodium to the quantity of two drachms daily is given. After a few weeks, varying according to the evidences of bromism produced, the quantity is reduced one-half and later this can be diminished to thirty or forty grains, and in some cases even less than this in the twenty-four In my experience the attacks of epilepsy can be materially reduced in this way in almost every case that has shown itself obstinate to the ordinary bromide plan. After a year or two if the attacks are not cured or kept in abeyance, the opium may be repeated. I have yet to see any detrimental results or sequences of this method.

The combination of chloral and bromide, in equal proportion, which is advocated by Seguin in certain cases has been put to the test of some personal experience. Its field of usefulness, I believe, is more limited than that of the opium-bromide plan.

Of the other drugs that have been persistently advocated in the treatment of epilepsy by clinicans whose names are synonymous with integrity, are borax and belladonna; possibly adomis vernalis should be included. Personally, I have had considerable experience with the use of borax in epilepsy, but I have never been able to convince myself that it has any effect upon the disease at all comparable to the bromides. In cases where, for some reason, the latter cannot be administered, it is, I believe, the best substitute. It should be given in powder or solution, in from ten to thirty grains three times a day. The only bad effect of such administration is an occasional attack of psoriasis which is easily combatted by the administration of arsenic. Belladonna and digitalis, and more recently adonis vernalis. have been recommended in the treatment, either alone or in combination with the bromides. I do not believe that one is

ever justified in administering them alone, at least not with the hope of effecting a cure; very frequently, however, they become important aids not alone to offset some of the disagreeable accompaniments of bromide administration, but to pick up cardio-vascular tone and aid the system in carrying off the bromides. The tincture of these preparations is generally used. the first two in doses of from five to ten drops and double this quantity of the latter. They may be administered with the bromides. With the exception of borax, perhaps, none of these deserve the name of substitutes for bromide. A number of other substances such as simulo, antipyrin, antifebrin, nitroglycerine, nitrite of amyl and anti-rabic injection have been undeservedly praised and hailed as cures for epilepsy. Each one of these with exception of simulo has a place in the therapeutics of epilepsy, but only to fulfill some certain definite mission, and I believe to be used symptomatically. For instance, in cases where a distinct vaso-motor manifestation precedes an attack in the shape of an aura the administration of nitro-glycerine with the bromides seems to have a particularly beneficial effect and especially in petit mal attacks. Measures that have been extensively written of and which I believe are not of the slightest value are, hypnotism, hydrastinine, salicylates, duboisine, picrotoxin, cannabis indica, amylene hydrate, osmic acid, sclerotinic acid and cocculus indicus. It may be difficult to believe that any of these substances have been praised as efficacious, but a review of medical periodicals shows such to be the distressing None of them deserves a trial.

After briefly referring to the various substances that are used in the treatment of epilepsy it is seen that the one substance in which we have faith is bromine in some form. The others that have been mentioned with favor are aids to the bromide, or substances that can be made use of when the administration of the former is denied.

Moral Suasion and its Utility.—Occasionally we meet with patients who are not willing without considerable persuasion and sometimes not then, to undergo the bromide plan of treatment which, in some cases, involves a considerable suffering and deprivation. It has only to be shown to them and their parents in a convincing manner that they are afflicted with a disease which, without treatment, is progressive, and that to a most ignominious end, the pauper or insane asylum, or to the custody of a care-taker if their worldly circumstances allow, to overcome their objections. If the hope can be extended to them, as the

writer believes that it can be, that the plan of treatment which is advocated, although it does not often completely cure the disease, very often so far restores the patient to health and freedom from attacks that he is able to discharge all the functions of a good social and political citizen, they will invariably decide in favor of the bromides. The attendant bromism, the mental aberrations, and the other symptoms which the long-continued administration of the salts of bromine sometimes produce are nothing comparable to the misery of the afflicted when the epilepsy is allowed to run its course without therapy.

New Plans of Treatment.—It has often been remarked that new plans of treatment and change of doctors are as beneficial to epileptic patients as change of air and clime are to other invalids. There is truth in this remark, but it is not difficult of explanation. The new physician enquires more closely into the diet, gives more stringent directions as to mode of life, etc., and starts the administration of medicine on a definite plan and the results are better for a time than his predecessor was able to get. But a sort of a personal inventory on the part of the first physician and a review of the details of the administration of the bromides would have secured equally good results. It is this persistent attention to minor points, regularity of eating, bathing, administration of medicine and all that hospitalization implies that makes the results of institution treatment better than those of private practice.

Treatment of the Attack.—For the great number of cases this can be summarized in a line. Place the patient in such a position that he cannot injure himself or destroy anything about him, and await the natural cessation of the attack. It is necessary usually to place something, such as a piece of cork, rubber or the folded end of a handkerchief between the teeth to spare the tongue from being bitten when the tonic spasm of the facial muscles forces the jaws together. If the patient is bound about with clothing in any manner these should be loosened so that respiration and cardiac action be in no way impeded. It should never be forgotten that epileptic attacks are liable to occur at night, and that oftentimes patients die from suffocation, the result of crowding of the face into the pillow or in other ways, and special precautions must be taken to avoid such accidents. When the convulsive part of the attack is over, a brisk effort should be made to arouse the patient and to make him take hot, concentrated nourishment. Although it is directly opposed to the teachings sanctified by time, I believe it is best

to prevent them from going at once into a stuporous sleep, from which they awaken after a variable but prolonged time, feeling as though they had received a severe corporal castigation and with a confused, exhausted feeling in the head. In some cases it becomes necessary to employ means to cut short the convulsive part of the attack, particularly when there is a tendency for the patient to go into the condition known as "status epilepticus," where convulsive phenomena succeed one another with great rapidity and often without any intervening period of stupor. In the Hospital for Epileptics, where only the severer forms of epilepsy are kept, and where status epilepticus as a clinical manifestation is often seen, I have had the best results from the employment of inhalations of chloroform, given alone or combined with a few inhalations of nitrite of amyl, and I strongly recommend this procedure in lieu of every other. Occasionally after a prolonged status epilepticus, or the rapid succession of a number of attacks, the patient will pass into a comatose condition from which it is absolutely impossible to arouse him. The most useful measures in such a condition are drop doses of croton oil, if constipation exists, and it does almost invariably, followed by the administration of coffee for its stimulant effects, small doses of belladonna, and by an ice bag to the head. Domestic measures, such as causing the patient to swallow a quantity of salt or salt water, a proceeding that is often resorted to amongst the unenlightened, are to be frowned at. They cannot possibly do any good. Another procedure, which can do no harm, but for the utilization of which time should not be wasted. is the immersion of the patient in hot water, most often employed in the case of young children. The plan of cutting short the attack already mentioned, is the rational as well as the efficacious one and should be employed.

In some cases of epilepsy in which the convulsive phenomena are preceded by warning, and particularly in those that have a sensory aura passing toward the head from one of the extremities, the attack may be prevented or its severity modified by subjecting the part from which the warning sensation passes to a smart blow or sensory impression, or by concentrating the attention on something else. Just how the stimulus works is a problem in the dynamics of physiological-psychology that no one has dared to attempt the explanation of. The warning given to patients is never far removed temporally from the oncoming convulsions, and therefore the sensory insult must be made by the patient. To aid him in doing this it was suggested by

Hughlings-Jackson that a girdle be worn beneath the sleeve above the wrist, this being the usual starting point of these auræ, and as soon as the patient felt it coming on to give this a powerful twist, or, if a loop, a tug at the free end. It is really surprising how often this arrests the attacks in patients who have this kind of warning. But, alas! these are very few compared with the entire number of epileptics. Occasionally the arrest of attacks in this way only robs the epileptic phenomena of the convulsive part, and the vertigo, the stupor, the feeling of profound prostration following it are just as severe as after an ordinary attack. In such a case the patient has little to choose between.

It is not necessary to speak specifically of the treatment of the clinical forms of the epileptic neurosis, and I shall content myself in saying that the same general treatment is applicable in one form of the epileptic neurosis as in another. The treatment of the attack may vary somewhat. In epilepsy procursiva, for instance, and in some manifestations of the epileptic equivalent it is necessary, in order to prevent the patient from doing injury to himself and perhaps to others, to restrain himalthough he perhaps does not appear to be devoid of his faculties. Many sleep seizures usually considered as somnambulistic are often of an epileptic nature, and their occurrence calls for stringent measures taken to cure the neurosis. Likewise a considerable proportion of the cases of dual personality are explained by the fact that their one personality is a normal one, the other an epileptic one.

Traumatic and Accidental Epilepsy.—These forms of epilepsy do not necessarily mean that the true epileptic neurosis is present at all, although the habitus epilepticus may, and does, develop if the disease continues for any considerable length of The treatment of the traumatic and accidental epilepsies depends very largely upon the origin of the disease. to trauma which has set up changes of an irritative nature in the cortex of the brain or the tissues in juxtaposition to it, and if it can be localized, the proper and only treatment is to excise it with all possible speed. Experience of the last few years has taught that the skull cavity can be entered, if done with great skill and care, without materially jeopardizing the patient's life. If the lesion that is the cause of the epileptic attacks be found. be it of the calvarium, the meninges or the cortex, it matters not its histological structure, unless it be aneurism, it should be completely excised. It needs to be borne in mind that the

danger to the patient is not materially added to by the removal of a generous piece of the cortex in which the lesion is situated or on which it has made pressure. The reason why many cases of Iacksonian epilepsy fail to be cured by operation is that the operation is not undertaken early enough. If the diagnosis can be made before any considerable amount of change goes on the brain which forms the anatomical basis of epilepsy, be it in the terminals of the dendritic processes, the probable one, or be it an increase of neuroglia substance, the chances of success from the operation are good, much better than some writers are willing to concede. This statement holds true only when the operation is undertaken before the patient has had upward of four to six attacks. I have under observation now a young man who was operated on and a large part of cortex, which showed striking changes of meningo-encephalitis, removed, who has been absolutely free from any sign of epilepsy ever since immediately after the operation, now two years. It is too early to report his case cured, but it seems to me well on toward that end. The diagnosis in this case was made after the second attack.

The practical point to be remembered about these cases, in addition to what has been said is, that even after the operation has ameliorated or apparently cured the disease the patient should be kept on moderate doses of bromides for from two to three years after the last fit. I deem this of sufficient importance to call attention especially to it. When the duration of the case and the character of the attacks puts it beyond the pale of operation, the treatment is in no wise dissimilar to that of congenital epilepsy. It needs no mention of the fact that the treatment of epilepsy which is symptomatic of new growths, pressure, or any localized lesion, is to remove it and thus remove the source of irritation, even if only amelioration is gained by such treatment.

Syphilitic Epilepsy.—True syphilitic epilepsy, that is the epilepsy of luetic meningo-encephalitis, gummatous infiltration of the meninges, localized syphilitic disease of the blood-vessels and localized cortical gummata, a disease which naturally occurs only after adult age has been reached, and then not so often in the opinion of the writer as some American and foreign authors would have us believe, requires rational and vigorous anti-syphilitic treatment. It is not sufficient to give mercury alone, that powerful absorbent of newly-formed granulation tissue, iodide of potassium, must be given also, in very large doses and freely diluted with water. In the administration of mercury the writer

has a personal preference for its use by inunctions. If these are properly done, it seems that the patient can be brought more quickly under the curative influence of the drug than in any other way.

Genuine syphilitic epilepsy often assumes the clinical form of Jacksonian epilepsy, and this is the form of symptomatic epilepsy that should not be subjected to operation for the removal of the materies morbi, it being more expeditious and certain to dissipate it by means of the drugs mentioned.

The scar-like tissue that is sometimes left after the absorption of the granulation tissue constituting syphiloma by vigorous anti-syphilitic treatment, is sometimes the cause of a symptomatic epilepsy after the real new growth has disappeared under medication. There is no reason, if the surgeon will undertake it, why these scars should not be excised, and if he finds on opening the skull remains of the syphilitic new formation which the anti-luetic treatment has not been able to cope with, that too should be removed.

Anterior syphilis produces epilepsy sometimes, not by the presence of syphilitic new growths in the meninges and cortex, but in setting up in these parts a degeneration, which is now usually called parasyphilitic, and which is comparable to the lesions of tabes and general paresis, syphilitic in origin, but not syphilitic, or at least characteristically so, in nature. The treatment of this form of epilepsy with anti-syphilitic measures is useless, if not worse than useless. If it be granted that after death these cases do not reveal lesions that can in any way be considered syphilitic, it is hard to suggest a reason why they should be subject to anti-syphilitic treatment. The treatment that these cases require and the one that in all cases is most serviceable, is the combined tonic and bromide plan, the nutrition of the patient being kept up to the highest possible point all These cases do not tolerate anything like the quantities of bromide that a case of congenital epilepsy does, and it is necessary to be on the careful lookout in these cases for toxic symptoms of this drug, for it is in these that sad results from careless administration of bromide is often seen. The general dietetic, hygienic, disciplinary treatment of this form of epilepsy does not differ from the form first considered.

What Can Be Expected from Operation for Epilepsy?—I believe that I have already said sufficient in answer to the question what can we expect from the surgical treatment of epilepsy in the remarks on the treatment of traumatic epilepsy.

But to summarize the matter in a few words: The present generation of physicians has witnessed the most remarkable advances of surgery that have ever been made. This may in a way account for the furor for operating on all sorts and conditions of epileptics that seemed to take hold of surgeons the civilized world over a few years ago. If it does not we are unable to suggest the answer. The truth of the statement no one can doubt who will examine the literature. The result of this experience would seem to be that to day, operation on the skull, trepanation of the skull, incision of the membranes and the removal of cortex, is only justifiable under the conditions already mentioned. Absolutely nothing is to be gained by subjecting any other forms of epilepsy to operation.

It has often been noted that in almost every case after operation there is a temporary cessation, of greater or lesser duration, of the fits. This has been attributed to the effects of the operation per se, and it has been pointed out that a corresponding respite follows any operation, it matters not on what part of the body it is made. I am inclined to believe that the operation per se has very little to do with diminution of frequency of the fits, but that it is due to hospitalization; limited, selected, diet; careful nursing; the discipline of regularity; increased amount of sleep, etc.

Epilepsia Tarda.—The treatment of epilepsy that develops for the first time in later life, epilepsia tarda, is a different matter from the treatment of primary idiopathic epilepsy. In a majority of cases this form of epilepsy is an expression of some diathetic condition anterior to the epileptic attacks, and it is necessary to continually combat the diathesis while treatment is being directed to the symptom epilepsy alone. The real anti-epileptic agent in these cases, as in the others, is bromide. Its beneficial effects are often materially increased if combined with nitro-glycerine.

The general treatment of these cases differs in no way from that suggested for the parasyphilitic variety. The danger of the status epilepticus is particularly great in these cases, and not the slightest hesitation should be had in cutting it short, if possible, with chloroform, nitrite of amyl inhalations, and by the use of nitro-glycerine internally.

Surveillance of the Patient.—The treatment of parents, guardians and care-takers of epileptic patients is oftentimes quite as important a feature as the treatment of the patient himself. The necessity of deputising the entire administration of medi-

cines, as well as the selection of diet, to some intelligent person who has the interest of the patient, is very necessary. It is wise to impress upon parents from the beginning of treatment the nature and outcome of the disease and the necessity for treatment as detailed and careful as that for typhoid fever. To carry it out without becoming discouraged, especially when in the beginning no great progress is made with the disease, is often very trying, and parents often require more diplomatic handling for the sake of the patient, than the latter himself. All in all the institution plan of treatment for epileptics from the poorer walks of life is the most feasible plan. For those whose financial position allows them to carry out the pedagogic, disciplinary and therapeutic plan above detailed, this method offers all that science can offer for this unfortunate class, and it must be said it offers more than one usually infers from the text books on the subject. The treatment of epilepsy, in reality, is not the cultivation of a barren acre. Personally I know of no organic disease of the nervous system of comparable chronicity and severity in which the results of treatment, intelligently carried out, are better.

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We deem it our duty to call attention to the inefficacy of the "Act Concerning the Practice of Medicine, Surgery and Midwifery," a law of 1893. Section 3 of that act reads: "Any person who shall, subsequent to said first day of October, 1893, file with said State Board of Health, duplicate statements in the form prescribed in the preceding section, showing that he is a graduate of a medical college which is recognized as reputable by any of the chartered medical societies of the State, shall receive from said State Board of Health, upon payment of two dollars, a certificate of registration, which shall state the kind or branch of practice in which the person named therein is engaged or is to be engaged." The duplicate statements referred to require that the applicant shall fill in a blank furnished by the Board, giving name, age, place of birth, present residence, and whether a graduate of any medical college or not, and if so of what college. The diplomas of certain colleges are accepted in place of a satisfactory examination. They are the "reputable colleges."

In a recent examination conducted by the Regents of the State of New York of the total number of graduates of a "repu-

table medical college" of New York City, who took this examination, eighteen per cent failed to pass. Under the existing laws of our State this eighteen per cent were eligible on presentation of their diplomas and by filing the necessary statements to register as practitioners of Connecticut. Doubtless many of these men, whom the Regent decided to be incompetent to practice in the State of New York took advantage of the very easy method of opening an office in this already overcrowded State. The statistics given below are at least suggestive:

During the year ending September 30, 1896, certificates of registration were issued to 213 practitioners. Of this number 204 were registered as graduated from "reputable medical colleges." There were many graduates of medical colleges not on the reputable list who applied for certificates, but the majority when informed that an examination was inevitable declined to stand the test.

We have not sufficient data at hand to give the comparative registrations for the year 1896 of Connecticut and the adjacent States. But the committee, appointed by the Connecticut Medical Society reported in the proceedings of 1896 that "During the year 1895 there were in Connecticut 190 registrations, an average of one new registration to each 4,000 of the population, according to the census of 1890. In New York during the year ending August 1, 1895, the latest data obtainable, the registrations were 504, or one new one to each 12,000 of the population, according to the same census."

If all candidates were required after presenting a diploma from some medical college to pass a State examination, conducted by the State Board of Health to whom it would seem such a duty naturally falls, the disproportion of practitioners to population (r to 400) would quickly readjust itself to the advantage of both.

Another class that demands attention is that of the advertising quack. They evade the law by advertising "free consultation," send their deluded victims to some drug store where their nostrums are to be had, "advise" them to call for Dr. Blank's No. 10 or No. 12, and so on. These men not only rob the people by imposing upon them their worthless decoctions, but they may do real harm, by causing delay in the treatment of certain diseases, which if taken in time by a reliable practitioner, would result in a cure.

There is a bill before the present Legislature which requires that all applicants in the future be graduates of some medical college and pass a State examination. We earnestly hope that it may pass. But why not make some provision in this bill, if it is not too late, for protection against these advertising "fakirs?"

THERE is probably no article of diet in daily use upon which we depend more than upon milk, containing as it does all the elements of a perfect food. To the average householder its chance of becoming contaminated on its way from the cow to the consumer are usually not considered at all. But the growth and the awakening of hygienic science have shown dangers which have hitherto passed unchallenged. And foremost among these comes that of milk contamination. sight does not seem to run any very great chance of infection; not so great, one would think, as meat and other articles of food which hang for hours exposed to view in markets. But when it is stated that among milk-fed infants alone five per cent of deaths are directly attributable to this one cause, the importance of the matter can be somewhat understood and appreciated by As a matter of fact, to the sanitarian, alive to all the risks, it becomes almost a wonder that any milk escapes contamination.

The contamination may originate in the cow. There are several diseases to which these animals and men have a common predisposition, transmissible in the milk; the most important of which is tuberculosis. In Mexico as many as thirty-four per cent of the cattle suffer from this complaint. But it is not probably from the cow that the greatest chance of infection comes. Milk, originally pure, has many steps to pass through. The udder of the cow, the hands of the milkman, the water in which the cans are washed, may all become sources of infection. Epidemics of typhoid fever, scarlet fever, and diphtheria have all been traced conclusively to a contaminated milk supply.

In Connecticut alone three noteworthy epidemics of typhoid fever have sprung from milk infection—in Waterbury in 1890; New Haven in 1896, and Stamford in 1895. At Stamford nearly four hundred cases appeared and engaged the attention of the profession throughout the country. The late epidemic in New Haven has again emphasized the seriousness of the matter, and has shown the necessity of dealing with it in some decided manner.

Cleanliness and care do not cost anything. They, indeed, soon raise the prospects of any business. The carelessness and uncleanliness, the cause for most of this trouble, have no reason-

able excuse for existence. Neither on sanitary nor business grounds. Some careful milkmen and dairies are strong witnesses to this fact.

It has been recommended in the report of the Secretary of the State Board of Health lately issued, that more aggressive and independent power be given health boards in promulgating better sanitary conditions. As it is now they act in most cases only after complaints where the damage is already done instead of anticipating it. Moreover, the saving in the end would be enormous, since any trustworthy man with the common instincts of cleanliness and common sense could save a city many a costly epidemic by reporting or warning at an early date the owner of disease-spreading nuisances or filthy dairies.

We take pleasure in announcing the election of F. W. Nolan to the Associate Board.

## MEDICAL PROGRESS.

THE ADVANTAGES OF EARLY BACTERIOLOGICAL EXAMINA-TIONS IN CASES OF PURULENT OPHTHALMIA NEONATORUM.—(Arch. Clin. de Bordeaux, No. 12, Dec. 12, 1896). Chartres reports the results of bacteriological examinations in twenty-six cases of ophthalmia neonatorum. He found very many pathogenic bac-In about a third of the cases reported there were gonococci alone; in others Læffler's bacilli; micrococci, streptococci, streptococci with gonococci, and in a few cases there were other mixed germs. 'The most serious of the cases were those in which there were streptococci with gonococci, streptococci alone or mixed with Læffler's bacilli. These cases terminated in loss of vision. When the gonococci alone were found the prognosis was very good, all the cases ending in complete recovery. From which results he concludes that there is an obvious advantage in the early bacteriological examination of the pus discharge in making a prognosis.

NEW TREATMENT FOR BURNS.—(Med. Week.). Dr. Poggi says that he has discovered that if a burnt part be placed in a bath containing a few teaspoonfuls of potassium nitrate, or the part covered with bandages wet with this solution the pain produced by the burn will quickly cease. In case the pain reappears, owing to the heating of the water, add more of the potassium nitrate, and after treatment for several hours, not only is the pain relieved, but the production of phlyctenæ prevented.

EXTRAORDINARY HEREDITARY PROLIFICACY.—The Wien Med. Woch., No. 3, 1897, has an article by A. Valenta, in which he writes of the extraordinary number of plural pregnancies reported by a practitioner of 1808. The patient was aged 40, and had suffered much from epileptic fits, and had during a married life of twenty years, given birth to thirty-two children, twenty-six being boys and six girls. Of a total of eleven pregnancies there were twins three times; triplets six, and quadruplets twice. Her first pregnancy was at the age of 14, and she then presented her happy (?) husband with four. The mother was one of quadruplets, and her mother had given birth to no less than thirty-eight children. On the father's side there was also a history of plural births, he being one of twins.

How Cat-gut may be made Aseptic.—(Int. Jour. of Surgery, Vol. 10, No. 1). Cat-gut may be rendered aseptic and even antiseptic, by the following method: Wind the gut on reels, shake the full reels in ether to remove the fat. Soak them in ten per cent carbolic from six to twenty-four hours according to thickness of the gut. Then place the reels in pure alcohol and the cat-gut is ready for use, and will be found to have lost little or none of its tensile strength.

PARALYSIS AFTER MUMPS.—(Rev. Méd. de la Suisse Romande, Dec. 20, 1896). L. Revilland reports a case where directly after an attack of mumps a boy aged seven became paralyzed. Weakness of the lower extremities was first noticed, the legs could be moved slightly, but he could not stand. There was left facial paralysis. The tongue could be protruded as far as the lips. Swallowing was exceedingly difficult and liquids when swallowed finally brought on a paralytic cough, so that feeding with a tube had to be resorted to. Later all four limbs were equally affected. The sphincters, special senses, general sensation and the vaso-motor system were intact. Respiration was labored. Faradic excitability to the left facial was diminished, while the direct current caused great pain but no contraction. The sixth on both sides, the seventh on the left and the twelfth nerves on the right were the nerves principally affected. In the diagnosis infantile paralysis could be excluded, and as inquiries evolved the fact that there had been no diphtheria in the community for five years; the boy's throat had been examined when the mumps began, and no signs of diphtheria were present, and his brothers and sisters had mumps at the same time, diphtheritic paralysis could also be thrown out. Under treatment the boy rapidly improved and was well in six weeks. The treatment consisted mainly of hypodermics of strychnine, massage, etc. This is the second case on record of paralysis as the result of mumps.

LACTOPHENIN AS AN ANALGESIC. — (Therapeutic Gazette, January, 1897; by Chas. S. Potts, M.D., Philadelphia). Lactophenin, chemically, is a phenetidine derivative, containing lactic acid in place of the acetic acid constituent of phenacetin. slightly soluble in water, and is practically tasteless. writer's experience has been limited to its action as an analgesic. The number of cases reported is not large, but still it is sufficient in number and variety to show that lactophenin is a valuable agent for the relief of pain. Case I was a man sixtyfive years of age, who for some time had been a sufferer from neuralgia involving the trigeminal nerve. By the use of lactophenin in five-grain doses, four doses daily, the pain entirely disappeared in a couple of days. Case 2.—A young man aged twenty-two, had had constant pain over the left eye, with violent exacerbations, in the afternoon, for two years past. Lactophenin in seven-grain doses every four hours relieved the pain. which, however, returned when the administration of the drug was stopped. The patient was permanently cured with large doses of quinine. Case 3.—Patrick S., aged twenty-seven, had been suffering for three days before coming to the clinic with a violent neuralgia affecting the branches of the trigeminus on the right side. He had a number of bad teeth. Three doses of eight grains each of lactophenin, taken every three hours, completely relieved the pain. Case 4.—Eight grains every three hours were given to a woman suffering from neuralgia of the trigeminal The next day she reported that the pain had ceased. Case 5.—A patient with neuralgia of the supra-orbital branch of the ophthalmic nerve was given eight grains every three hours, for two days, without any beneficial results. Case 6.—John D., aged thirty-five, for a year past had been troubled with a severe sciatica. Ten grains every four hours relieved the pain for a while, but it finally returned. All other modes of treatment have since been tried in this case without result. Case 7.—Mrs. M. F., aged fifty, was given five grains every three hours for severe pain in the right side of the face and ear, due to an epithelioma of the larynx. This dose relieved the pain but she complained that it made her sick at the stomach. The same dose of phenacetin was then tried, but it did not relieve the pain so well. Case 8.—H. S., aged sixty-four, complained of most intense continual pain involving the entire head. This was afterwards found to be due to an alveolar abscess. The patient also had intestinal nephritis. Lactophenin gr. iv., increased to viii., p. r. n., relieved the pain. Case 9.—Mrs. S., aged fortyfive, has a family history of migraine on both sides, and has been subject to headache since a child. She had violent headache of the ordinary migraine type. By taking four grains of lactophenin when she felt an attack coming she was generally able to stop it. At times it was necessary to repeat the dose in an hour. Case 10.—Mrs. W., aged thirty. Family history of migraine on mother's side. Patient has had attacks since she was sixteen years of age. Nothing except antipyrin ever had any influence in stopping an attack until she was given five grains of lacto-This, so far, has always aborted the attack. phenin p. r. n. Case 11.—John D., fifty-two years of age, gave a history of having been subject to muscular rheumatism, for the past seven or eight years. Lactophenin, gr. x., was prescribed, to be taken when he felt the approach of an attack. One or two doses taken thus have already aborted the seizure. Case 12.—Kate G., aged forty-five, had severe pains and stiffness of right sterno-mastoid muscle for two weeks. The muscle was also tender. Lactophenin, gr. x., every four hours, was ordered. Three days later she reported herself very much better. At her third visit, five days after the first, she was entirely well. Case 13.-M. O'N., aged thirty-nine, a chronic sufferer from locomotor ataxia, complained very much of severe shooting pains in the chest and legs. He was ordered eight grains of lactophenin, to be taken every four hours. Three days later he reported that the pains had ceased. Since then (six months ago), he has been able to control the pain with this remedy. Case 14.—W. B., aged thirty-five, with locomotor ataxia; complained of severe darting pains in the legs. Lactophenin, gr. viii., p. r. n., relieved the condition.

It will be seen that the drug was administered to five cases of neuralgia involving the branches of trigeminus, four of which were relieved; to one case of severe sciatica, that was beneficial for a time; to two cases of severe reflex pain due to irritative conditions elsewhere; to two cases of migraine, two of muscular rheumatism, two of characteristic pains of locomotor ataxia, all of whom received benefit from the use of the drug; and to four cases of simple headache presumably benefited. Of the fourteen cases that we have been able to follow only one (case 5) entirely failed to be benefited.

# HOSPITAL AND CLINIC NOTES, ETC.

The following operations to which students of the Medical School were invited took place at the New Haven Hospital in the past month: February 14, tumor of breast; February 19, hæmorrhoids; February 20, enucleation of the eye; February 24, extraction of cataract; February 27, perinæorrhaphy, trachæorrhaphy; February 28, excision of inguinal glands; March 6, carcinoma of breast, ulcer of heel, hæmorrhoids; March 10, suture of fractured patella, removal of foreign body from female bladder, necrosis of tibia, perinæorrhaphy; March 12, necrosis of humerus, gangrene of penis.

The graduation exercises of the Connecticut Training School for Nurses, New Haven Hospital, were held in Gifford Chapel March 2d. A reception and dance followed. The graduates were the Misses Heavren, Robertson, Roche, Downs, Moore, O'Sullivan, Hasson, Wallace, M. Walsh, MacMartin, Churchhill, McCloud, Pardee, Mrs. Smith and Mrs. Atwood.

A REVIEW OF CONNECTICUT HOSPITALS—(Continued.)

New Haven Hospital, 17th annual report.—The total number of patients under treatment during the year 1896 was 1,14c; an increase of 56 over any previous year. The largest number of patients on any one day was 133; the smallest was 96. were 144 deaths during the year, the death rate being a small fraction over 12 per cent. Forty-six patients died within 24. hours; 14 within 48 hours; the death rate of the remainder was 7.7 per cent. The large number dying within 24 hours is very The new dietary which unusual being 23 more than in 1895. was begun January 1, 1896, diminished the number of complaints from patients and also the expenditure for food. average cost of supporting each patient was \$8.77. admitted during the year 1,034-709 males and 325 females. this number 519 were discharged cured, 293 improved, 69 unimproved, 144 died, and the remainder are still in the hospital. There were 31 births—19 males and 12 females. The patients came from 82 different towns and from 11 other States and countries: 639 were residents in New Haven. Of the 117 occupations represented the principal ones are as follows: **Domestics** 40. seamen 33, laborers 136, teamsters 25, brakemen 22, farmers

29, painters 20, machinists 20, carpenters 16, clerks 14, brass-workers 10. The ordinary charge per week in the wards is \$7. The current expenses were \$52,614.29; of this \$12,888.19 was for salaries; the balance for living expenses, drugs, etc. During the year 88,180 quarts of milk, 264,150 pounds of ice were used. Medicines cost \$1,352.60; cake cost \$76.06. There were 504 medical cases, 658 surgical cases, and 258 operations during the year. The Training School for Nurses averaged during the past year 40 members.

The Waterbury Hospital, 7th annual report, ending December 14, 1896.—During the year 289 were admitted making total of 320. Of these 187 were males, 133 females; 255 were discharged, 30 died, and 35 remained. There were 5 births. Of the patients, 156 were Americans, 93 Irish, 15 English, 12 Germans, 13 Poles, 10 Italians and the rest scattering. Of this number 249 were residents in Waterbury, 21 in Naugatuck, 11 in Thomaston. The occupations were as follows: Housewives 63, laborers 59, students 22, factory operatives 37, domestics 20, the remainder varied. The lowest charge is \$7 per week, for which are furnished medical and surgical care, nursing, medicines and food. The expenditures for the year amounted to \$16,316.49. Of this \$5,246.47 was for salaries. There were 193 medical cases, 94 surgical and 33 ophthalmic and auric cases.

Connecticut Hospital for the Insane, 26th annual report.—During the year 1896 there were 2,194 patients; 1,075 males, 1,119 females. There were discharged 62 males, 48 females; improved 48 males, 29 females; not improved 42 males, 39 females; died 77 males, 67 females. Age of patients admitted: under 15 years, 13 males, 12 females; from 15 to 25 years, 53 males, 46 females; from 25 to 35 years, 78 males, 62 females; from 35 to 45 years, 46 males, 36 females; from 45 to 60 years, 31 males, 48 females; over 80 years, 3 males and 6 females. Residence of patients admitted: State at large, 423 males, 33 females: Hartford County, 821 males, 800 females; New Haven County, 1,051 males, 1,047 females; New London County, 373 males, 363 females; Windham County, 129 males, 142 females; Litchfield County, 204 males, 220 females; Middlesex County, 344 males, 329 females; Tolland County, 103 males, 119 females; Fairfield County, 620 males, 543 females. Principal occupations of those admitted, housewives 1,477, no employment 938, laborers 944, the trades 646, factory employes 656, domestics 652, machinists 118, teachers 109. Of the professions there are, clergymen 15. physicians 16, lawyers 8. Principal causes of insanity, anxiety

of mind 229, connected with the affections 300, epilepsy 312, ill health 559, intemperance 783, masturbation 221, old age 246, over work 224, puerperal state 159, religion 113, injuries to head and spine 122, congenital defect 84, domestic difficulties 138.

| CTIMMADA | ΛP  | HOSPITAL | DEDODAG  |
|----------|-----|----------|----------|
| SUMMARY  | ()P | HUSPITAL | REPURIS. |

|                            |         |   | Number of<br>Patients. |            |            | TREATMENT. |            | RESULTS.    |          | Sundries.             |                          |
|----------------------------|---------|---|------------------------|------------|------------|------------|------------|-------------|----------|-----------------------|--------------------------|
| Ноѕріта                    | ALS.    |   | Males                  | Females.   | Total      | Surgical.  | Medical.   | Cured       | Died     | Charge<br>Per<br>Week | Expenditures.            |
| New Haven,<br>Hartford,    | -       | - | 773<br>1048            | 367<br>044 | 1140       | 1          | 504<br>779 | 519<br>1128 |          |                       | \$52,614.29<br>58,770.31 |
| Bridgeport,                | -       | - | 240<br>187             | 221        | 561        | 221        | 218        | 296         | 83       | 7                     | 26,198 18                |
| Waterbury,<br>William W. B | Backus, | - | 166                    | 133        | 320<br>268 | 132        | 193        | 255<br>131  | 30<br>27 | 7                     | 16,316.49                |

NEURALGIA OF THE GENITO-CRURAL SIMULATING-OVARITIS.-Mrs. H., aged 23.—Gave birth to full term child four years ago. Miscarried 20 months ago during fourth month of pregnancy. Married 5 years. Symptoms were-pain in region of left ovary, more intense for a day or two before menstruation and relieved the second or third day after flow began; bowels constipated; appetite capricious; patient inclined to the hysterical; nausea; a localized tenderness on pressure over the ovary; menstruation deranged; severe pains sometimes darting half way down the anterior surface of the left thigh. Patient had been told that she had inflammation of ovaries by one physician, and by a gynecologist that her suffering was from an inflamed tube. On palpation of the abdomen I found not only the tenderness in the left iliac region but also a tenderness along the inner edge of left psoas in the neighborhood of the umbilicus, continued pressure producing nausea. Vaginal examination found ovary normal, tenderness about it, more strongly marked on the Consulted with Dr. F. W. Pirritte. round ligament. applied cantharides blister over spinous process of second lumbar-vertebra. Result complete and immediate relief.

G. н. J.

Some Observations Concerning Kola (Sterculia Acumenata).

—The kola is originally a native of the West African coast and I have found it as far as 300 miles inland. Appreciating its peculiar qualities it was early introduced into the West Indies and South America by the Spaniards that the negro slaves might be benefited by it. Along the African coast it is known as the

kola, guru nut and by the people of the great Congo basin as the makazu. It is sold in every market place from Freetown to Loanda. Two hundred yards from my house at Lukunga were two trees, male and female. They were about 50 feet in height with a shiny dark green foliage among which, on the female tree, hung the dark-red, leather-like pods from 5 to 7 inches in length, 3 to 4 in breadth, and 1 or 11 inches in thickness. pod contained from 3 to 7 nuts, resembling in size and shape the horse-chestnut and of varying shades of rose color. The air for 30 yards about was laden with a rich, pleasant aroma. Beneath these trees there was not a sign of vegetation and the worrisome mosquito was not to be found. The nuts were gathered only from pods which had cracked open and were never eaten when they became dry. To say that they were highly prized by the natives would be putting it lightly. them have declared to me that this nut was "mpila mosi kinini," "just like quinine," in its effect upon the fevers (malarial). It was also used as a stomachic, a general tonic, and for asthma. For two other purposes it was always in great demand, first as a preventative for drunkenness; second, to sustain strength under great muscular exertion. The Congo man is exceedingly fond of palm wine, not so much because of the "funny feeling" it produces as because of its sweetness and "snap." Four or five men will get together and drink until they can contain no more. On such occasions, "between drinks," they will each eat two or three kolas which seems to have the effect of counteracting the influence of the alcohol, leaving their heads clear and their powers of coördination unimpaired. In Congoland the native is the beast of burden and men carry upon their heads from the coast to the interior loads varying from 60 to 120 pounds. During a journey which will last seven days over an exceedingly rough country, but very little food is consumed and that of the most indigestible character, as raw madioca, palm kernels and palm-nuts. The lack is made good by a half-dozen kolas, which are usually eaten about noon, sometimes at night and always when at a point in the journey where water is to be found. The flattest, muddiest water tastes like nectar after eating a kola nut. Since my return to America I have been using various preparations of this nut with a reasonable degree of success. the more interesting cases I mention a few:

1. For Asthma. In this affliction the results were practically uniform with any particular preparation, the effects only varying with the preparation. Miss M., 18 years of age, suffered

with from two to five paroxysms weekly, for nearly six months, of spasmodic asthma. The usual remedies were tried without result. A change of residence was advised and patient lived in North Haven for three months without a paroxysm but a return to this city favored the disease. I next and last tried kola and in nine months have a record of 5 paroxysms the last occurring eleven weeks ago. The patient has during that time dwelt in the city and has kept up the use of kola with more or less regularity.

Mr. M. about 40 years of age, gives history of traumatism of chest by which the walls were punctured and the pleuræ and lungs injured. Has suffered from a traumatic bronchitis, and for four weeks of asthma before being treated for the latter complaint. Immediate relief lasting for three weeks to date followed the exhibition of kola.

- 2. In Antero-lateral sclerosis. Miss B., 29, in September, 1895, developed a typical case. Consultation confirmed diagnosis. For eleven weeks neither strychnia nor arsenic produced positive results. At the end of that time muscles gave no reaction to electricity. For five weeks following gave kola, at the end of which tremor of upper extremities was barely perceptible, coördination improved and quadriceps extensor reacted to electric stimulus. For following 12 weeks continued use of kola, nitrate of strychnia hyperdermically and by mouth, and a Faradic current. Result, steady and progressive improvement. April 15, 1896, patient desired to discontinue treatment as she felt strong enough to resume her vocation, cooking. At above date no trace of disease remained save exaggerated patella Patient has been continuously at work since. reflexes.
- 3. Neurasthenia. In neurasthenia I have in eleven instances used it with positive though varying success. How far the strength of varying preparations affected the results I do not pretend to say, but of this I am confident, that this drug is of decided benefit in this particular affection.

There are upon the market many proprietary preparations and unofficinal fluid extracts. Of the former I have tried five, of the latter two. In comparing the results of the preparations with those of the fresh nut I am inclined to believe that in most of them some active principle is lost in the manner of making the product with one exception—the vino-kolafra by the Brunswick Pharmacal Co. I know it is contrary to the traditions of the profession to proclaim faith in any patent remedy but I feel justified on the double basis; i. e., that we have no officinal

preparation and that the vino-kolafra has given the most even results. Of the fluid extracts Wyeth's seems to be the better by far containing much less tannin than the other. Firmly believing that the sterculia will take its place among the important drugs of the U. S. P. and our materia medica, I shall continue its use with the hope of benefiting those to whom I minister.

GEORGE H. JACKSON, M.D.

## **OBITUARY.**

William H. Goode, an old graduate of the Yale Medical School, died at Staunton, Goochland County, Va., February 2. 1807, at about 80 years of age. After graduating at Hampden-Sidney College he entered the Medical Department of Yale and graduated in the class of 1842. He was at once appointed assistant to the elder Dr. Draper (author of "Draper's Chemistry) of New York. Returning South he settled in Goochland County, where he married Elizabeth Morris. Dr. Goode had lived in Staunton twenty-five years, and enjoyed the highest respect and esteem of all who knew him. "He was a type of a generation gone, courteous, kind, scrupulously exact in his business transactions, faithful to every trust and strict in his religious observances." Four children and his wife survive him, one son-John V. Goode-being General Manager of the Fort Worth and Denver system of railroads. Dr. Goode's "remembrance of Yale and his associations there were among his most treasured thoughts and he was always happy to talk of them." He had, at the time of his death, numerous letters from Dr. Tully and others at Yale.

Burr R. Abbe, a prominent banker of Hartford, died at his home suddenly Saturday, March 13, 1897, of heart trouble. He was born in Litchfield, Conn., November, 1830, his father being a physician, Dr. Alanson Abbe. He practiced with his father for a time and then entered the Yale Medical School, graduating in the class of '54. For many years Dr. Abbe had given up the practice of medicine for banking. Dr. Abbe was married twice, and his second wife and seven children survive him, three of his sons having graduated at Yale College.

## ITEMS OF INTEREST.

Plans are being prepared for the new building of the Bellevue Hospital Medical School to replace the one recently damaged by fire. The new building is to be erected at Twenty-sixth street and First avenue, adjoining the Carnegie Laboratory. It is to be fire-proof and have all modern conveniences. The college faculty hope to have it completed ready for use by September 1st.

Professor Chambers and Dr. T. C. Gilchrist of John's Hopkins University Hospital, report a remarkable case of injuries inflicted by the X-rays. The patient was an exhibitor of the rays in Baltimore, and took many pictures daily of his hand. After three weeks the skin became puffed up and red, and later on became very painful. Finally the skin wrinkled, dried and peeled off. The most remarkable feature was the condition of the bones, especially those of the first three fingers. They were tender on pressure, and thickened at the joints. Voluntary movements of the hand and wrist, excepting the little finger, were entirely absent, but the sensation of touch was not impaired.

According to recent reports as to the health of the British army the admissions into hospital during the last twelve months were 993 per 1,000. Out of an average strength of 200,600 the admissions to hospital were 199,312. The percentage of these suffering from venereal diseases is not given.

It is estimated that the widow of the late Baron Hirsch has distributed 12,000,000 francs in charity during the past two months. Two million francs of this was for the establishing of a laboratory for the Pasteur Institute in Paris, and one million for a hospital in London.

In Paris a young man of twenty-eight is being exhibited who has all the outward aspects of a mummy. There is no appearance of flesh upon his bones and his eyes resemble those of an owl. He is well educated. His brothers and sisters are well formed. His parents offer no explanation for this strange phenomenon.

During the last month there has been a mild epidemic of grip in New York. The disease was first noticed in December but did not reach its height until the latter part of February, in one week of which there were ten deaths from the disease. The total deaths for three months from this malady was forty-five.

There is a bill before the New York Legislature to establish a laboratory for the preparation of evidence for use in future murder trials conducted by the State. In the recent Barberi trial \$7,250 was paid to physicians for giving expert evidence. It is to save this expense that the new bill is framed.

The International Sanitary Congress which met at Venice in the last week of February to discuss the bubonic plague has adopted these methods of disinfection: Clothing is to be subjected to steam, either under pressure or otherwise, and heat of roo° C. maintained for fifteen minutes. A substitution of salt for hydrochloric acid in a sublimate solution was also approved, and an alkali solution and savoneuse of carbolic acid as an alternative with carbolic acid. Papers of value will be exempt. The period of incubation limit has been fixed at ten days.

The number of practitioners in the United Kingdom holding British qualifications for 1897 is given as 34,284. The registrations during the past year were 1,385.

Statistics have been published relating to the mortality of the French navy for the last five years. The deaths were 11 per 1,000 for the men, and 19 per 1,000 for medical officers and dispensers. Tuberculosis was responsible for one-fourth of this mortality.

At a recent meeting of the Board of Trustees of the Jefferson Medical College, Philadelphia, Dr. J. Ghalmers DaCosta was elected Clinical Professor of Surgery. Dr. DaCosta has been connected with the college for many years, and has recently been Demonstrator of Surgery and Chief of the Out-patients Department. The new appointment is made in recognition of his long service and valuable contributions to surgical literature.

The preliminary program of the fourth session of the Congress of American Physicians and Surgeons to be held in Washington, D. C., May 4th, 5th and 6th, gives notice of the following papers: "The Gouty and Rheumatic Diathesis, and their Relation to Diseases of the Eye," by Dr. Charles Stedman Bull of New York City, Dr. S. Oliver Richey of Washington, D. C., Dr. S. D. Risley of Philadelphia, Pa., Dr. Robert Sattler of Cincinnati, Ohio, and Dr. R. A. Reeves of Toronto, Canada, to be followed by a discussion in which Dr. J. M. DaCosta of Philadelphia, Pa., and Dr. Henry M. Lyman of Chicago, Ill., members of the Association of American Physicians, and others, will participate; a paper on "Otology in its Relations to General Medi-

cine," by Dr. Clarence J. Blake of Boston, Mass; papers on "Internal Secretions Considered in their Physiological, Pathological and Clinical Aspects," by Dr. William H. Howell of Baltimore. Md., and Dr. Russell H. Chittenden of New Haven. Conn., who will speak in behalf of the American Physiological Society, Dr. J. George Adami of Montreal, Canada, Dr. James J. Putnam of Boston, Mass., and Dr. Francis P. Kinnicutt of New York City, in behalf of the Association of American Physicians, and Dr. William Osler of Baltimore, Md., in behalf of the American Pediatric Society; a paper on "Deformities of the Hip-joint, especially Congenital Dislocations," will be read by Dr. E. H. Bradford of Boston, Mass., to be followed by a discussion by Dr. V. P. Gibney of New York City and Dr. Harry M. Sherman of San Francisco, Cal.; and papers on "The Classification of Acute General Peritonitis: the Prognosis and Treatment of the Different Varieties," Dr. William S. Halsted of Baltimore, Md., reading a paper on "The Classification," and Dr. Robert Abbe of New York City, on "The Prognosis and Treatment of the Different Varieties." A discussion will follow, participated in by Dr. John Homans of Boston, Mass., Dr. A. Van der Veer of Albany, N. Y., Dr. Henry H. Mudd of St. Louis, Mo., Dr. Fred'k Lange and Dr. Arpad G. Gerster of New York City. William H. Welch, M.D., LL.D., Baltimore, Md., is President of the Congress, and William H. Carmalt, M.D., New Haven, Conn., Secretary.

#### PRACTITIONERS REGISTERED MONTH ENDING MARCH 18.

| Name.                  | Basis of Registration.                | Where Registered |
|------------------------|---------------------------------------|------------------|
| Harry Wm. Grene,       | Boston University Medical School,     | Enfield          |
| C. H. Straub,          | Long Island College Hospital,         | Greenwich        |
| C. Johnston Parsons,   | N. Y. Medical Coll. and Hos. for Wome | n, Salisbury     |
| Michael H. R. Gill,    | Yale Medical School,                  | Norwich          |
| Orland R. Blair,       | Yale Medical School,                  | <b>Enfield</b>   |
| Irwin Granniss,        | Yale Medical "                        | East Haven       |
| Edwin R. Kellogg,      | N. Y. Hom. Medical College,           | Greenwich        |
| Lawrence V. Mullry,    | N. Y. University,                     | Greenwich        |
| Seymour Putnam,        | Bellevue Med. College and Hospital,   | New Haven        |
| Mary A. Holbrook,      | Univ. of Michigan Medical College,    | East Haven       |
| Edward F. Moore,       | Physicians and Surgeons, N. Y.,       | Hartford         |
| Frank J. Duffey,       | Long Island Coll. Hospital,           | Greenwich        |
| Charles M. Kent,       | Bellevue Med. Coll. and Hospital,     | Greenwich        |
| George H. Bean,        |                                       | New Haven        |
| Clara H. Hill,         | Hahnemann Med. Coll., Phila.,         | Meriden          |
| W. A. P. Andrews,      | Bellevue Medical Coll. Hosp.,         | West Haven       |
| Phoebe A. T. Williams, | Woman's Med. Coll. of New York,       | Greenwich        |
| Charles F. Connor,     | Coll. of Phys. and Surg., New York,   | Voluntown        |

# MEDICAL SOCIETY REPORTS.

REVIEW OF MEDICINE IN CONNECTICUT DURING THE PAST YEAR.

(Continued from page 243.)

Phthisis did not vary to a considerable amount in mortality one month with another during the year. The curve of deaths was slightly upward to a maximum in March and April, then as gradually downward until September, a slight rise coming in August, perhaps a consequence of the "hot wave." What has been said of phthisis might, broadly speaking, be said of bronchitis and pneumonia, all of which depend so largely on weather and season. The increase in diarrheal diseases accounts for the high mortality in the third quarter of the year. death from them increased a hundred-fold. Death by accident was, of course, higher in the Summer months when circumstances render life more exposed. Heart diseases and nervous diseases are unfortunately each still classified as a whole. specific or valuable information concerning them therefore can be secured from statistics at the present time. By way of comparison it is interesting to note that deaths from all heart diseases and nervous diseases combined exceed by only a small amount those from phthisis. Puerperal fever, once so prevalent, has now an almost empty column to its credit in the bulletins, thanks to improved anti- and asepsis. Small pox was reported three times during the year, twice in New Haven, once in Middletown. The two cases in New Haven proved to be mistakes in diagnosis, the one in Middletown a genuine case of varioloid. The reported cases proved fortunate in view of circumstances, for by the warning large numbers of people were vaccinated.

During the year the bulletins of the State Board of Health made appropriate reference to the looseness and negligence of registration returns, their unfortunate connection with politics, the several merited prosecutions of physicians who neglected to send in their registrations, references to medical quacks who still "set up" though not allowed by law to register since October, 1893, and finally, references to the unsuccessful attempt to establish a contagious disease hospital in New Haven—each as events called them forth.

The reports of five of the six regular hospitals of the State

have been issued—i. e., of New Haven, Bridgeport, W. W. Backus in Norwich, Hartford and Waterbury. report progress, the facts concerning the four largest being of especial interest. Comparative reports in detail are given elsewhere in the Journal. Nearly four thousand patients were cared for in these alone. Hartford from its central position and thickly settled environs leads with sixteen hundred patients. In the New Haven and Hartford hospitals considerable improvements and alterations have been made as necessity prompted. Even now Hartford is still in extreme need of a home for her nurses and a larger lying-in department, while New Haven still needs at least an isolation hospital ward where she can accommodate contagious diseases. Hartford contemplates in the near future isolation of her tuberculous cases, a move which will be soon followed, no doubt, in all the hospitals of the State. During the past year Bridgeport has received a considerable legacy toward building a new ward. At the four larger hospitals there are ten resident hospital positions, six of which are held by students who received their medical education in Connecticut. In New Haven, Hartford, Bridgeport and Norwich, flourishing training schools for nurses exist, with forty, thirty-one, sixteen and eight nurses respectively. In all these not only practical instruction in care of the sick is given but instruction in the causes of disease and principles underlying their care (by lectures and recitations). The courses of study are more complete and satisfactory than ever this year.

The course outlined in the New Haven Hospital is this in brief: "Each nurse is assigned to one ward or department for several weeks, and in the course of a year has studied surgical, medical and obstetrical nursing, and also the preparation of special dishes suitable for invalids and convalescents. \* \* \* At the close of the term of study in the hospital the nurse has a vacation of one month and then returns to take for eight months such cases of private practice and missionary nursing as shall be assigned her. The pupils remain in the school for two years pursuing their studies and daily routine of work under the charge of the superintendent of nursing." The candidates must be over twenty-four and under forty years of age. They will be received one month on probation and must present a certificate of good character.

Norwich has an out-patient dispensary (than which there is no more useful adjunct to a hospital), where a large number of

patients can be treated. In New Haven the patronage of the Dispensary has largely increased and a much larger building is already needed to carry on the work.

The several institutions for the insane, under private management as well as the State Hospital have little of interest for the general practitioner. Of the latter, indeed, little that is new can be said, further than that two new buildings to accommodate the increasing number of patients were built during the year, and that more are already needed.

Within a year from the time of writing "expert testimony" has come into public prominence in the State. Much doubt has arisen in the minds of both lawyers and doctors as to value of such evidence in its present form of presentation. In the recent Kippie trial, as in the Hayden of years ago it is doubtful whether the testimony of the experts arrayed on either side received the recognition due it. If medical "expert testimony" is to play its proper rôle in the court room some radical change in the taking of this testimony must be made. Such systems as are in vogue at present in Germany and England, with suitable modifications called for by a republican form of government, may ultimately be adopted. At all events, the people of this State, whom these matters concern, are now, with those of other States, giving the matter unusual attention.

This year has seen the change of a three to a four-year course in the only medical school within the limits of the State and a consequent alteration of its curriculum. This step has placed it among the pioneer schools toward a higher standard and more thorough education for the practice of medicine in this country. The late rapid growth of the school has already shown the move to be a wise one.

To omit the mention of three distinguished practitioners deceased during the year at such a time would be an injustice. On February 23, 1896, Dr. David L. Daggett of New Haven died; on March 4th Dr. Irving W. Lyon of Hartford (at the time of his death President of the Hartford County Medical Association, and on December 11th Dr. Leonard J. Sanford, a former Professor of Anatomy in the Yale Medical School.

During the year 213 certificates of registration for practitioners were issued, most of them on diplomas from "reputable colleges." This matter is treated elsewhere in this journal.

The report of the Secretary of the State Board of Health for 1896 has recently been issued. In it are the discussions of ques-

tions correlative to public health which call for reform either in remedial legislation or more exacting public opinion. They will be dealt with more at length elsewhere.

The Windham County Medical Association meets on Tuesday, April 20, at the Hooker House, Willimantic. The president is S. E. Guild of Windham, and the secretary is W. H. Judson of Danielson.

The New London County Medical Association meets at Mohican Hall, Norwich, April 11, at 2 P. M. The paper read will be "The Forceps in Labor." Charles E. Graves, secretary.

The annual meeting of the Hartford County Society occurs on Wednesday, April 21st, in the Y. M. C. A. Building, Hartford, at 10:30 A. M. Dr. A. G. Cook reads a dissertation, title not yet announced; Dr. E. A. Down has a paper, title not announced; Dr. S. W. Irving presents County Report on "Disinfection"; Dr. W. G. Murphy has a paper on "Infant Feeding."

The New Haven County Medical Association meets on Tuesday, April 15, 10:45 A.M., at the New Haven House, New Haven. Drs. O. J. D. Hughes, O. T. Osborne, N. R. Hotchkiss, are the committee to report on "Diarrhea in Young Children." The dissertators are Drs. P. S. Robinson, E. L. Thompson, and E. W. Goodenough.

### ALUMNI AND SCHOOL NOTES.

The following changes took place in the house staff of physicians at the New Haven Hospital on March 15th: Dr. L. W. Abbott, '96 Y. M. S., began as assistant house physician; Dr. S. H. Wadhams, '96 Y. M. S., was promoted to the position of assistant house surgeon; Dr. A. G. Nadler, '96 Y. M. S., who has been assistant house surgeon, was promoted to the position of house physician and Dr. S. R. Kirby was promoted to the position of house surgeon.

At a recent meeting of the Sigma Xi, the Scientific honorary society of the University, Prof. Harry B. Ferris, Prof. Graham Lusk and Dr. Charles J. Bartlett of the Yale Medical School were elected to membership.

The following medical schools are represented at the Yale Medical School: University of Pennsylvania by A. S. England; Jefferson Medical College by M. K. Grady; McGill University

by C. O'Neill; Vanderbilt University by C. P. Edwards; University of Colorado by J. H. Hurst; University of Kansas by Dean Foster; Alabama Medical College by Frederic Ingate.

The second year class of the Medical School consists of nine members. Six of these are college graduates and the other three come from other medical schools.

The Chemical Club of Yale University met at the Physiological Laboratory of the Medical School on Friday, March 26th. Professor Graham Lusk read a paper, "On the Chemistry and Physics of the Body."

- 1849. Dr. William H. Sage of New Haven is among the Southern tourists. He will visit St. Augustine and other important Southern cities.
- 1884. Dr. O. T. Osborne will read a paper on "Dietetic Treatment in Diarrhoea of Young Children" at the annual meeting of the New Haven County Medical Association April 15th.
- 1890. Dr. E. R. Baldwin has an article in the last issue of the *Scientific American* entitled, "On Sanitariums at Saranac Lake, N. Y., for Treatment of Phthisis."
- 1892. Dr. Mathew Kenna has removed his office from 102 Lyon street to the corner of Olive and St. John streets.
- 1896. Dr. James Maher recently passed the State examinations of New York.
- 1896. Dr. A. G. Nadler, who has been ill with typhoid fever for several weeks, has recovered and is able to resume his duties at the New Haven Hospital.
- 1896. Dr. S. M. Hammond has been appointed to the hospital staff of the Bridgeport City Hospital.
- 1898. C. B. Brainard has recovered from his severe attack of pneumonia and has resumed his class-room work.
- 1898. Raymond Delmas, the poet of the Junior Class, has a poem entitled "Un Baiser, une fleur," in the March number of La Famille of France, and another poem in the April issue of the La Revue Canadienne, entitled "Paques."
- 1898. W. R. Munger has left school temporarily on account of the illness of his father.
- 1898. E. E. O'Donnell won first place in the shot-putting contest at the Yale in-door games on March 13th. His prize was a handsome silver cup.

- 1898. The second division of the Junior class began the laboratory work in the bacteriological course on Saturday, March 20th. The division consists of the following: Billings, Cobb, English, Loomis, Margosian, Nowland, Parker, Perkins, Porter, Rowland and Tyler.
- 1899. Mr. Charles P. Edwards has left school and returned to his home at Ivy, North Carolina.
- 1899. T. J. Bergin and A. E. Von Tobel are members of the Phi Beta Kappa Society of Yale University.
- 1900. George L. Buist is among the instructors of the Chautauqua School of Physical Education for the coming Summer.
- 1900. C. W. Field won second place in one of the trial heats of the 50-yard dash at Yale's indoor games.

#### BOOK REVIEWS.

An American Text-book of Applied Therapeutics. Edited by J. C. Wilson, M.D., Professor of Medicine in the Jefferson Medical College. W. B. Saunders, Philadelphia, Pa.

The editor states in his preface that this book is written from the standpoint of the practitioner; in other words, that it is to be used as a consulting book, which is correct, and not as the name implies as a text-book. The editor also states that he assumes the entire responsibility for the various departures from the conventional modes of spelling found in his book, many of which alterations the present reviewer cannot approve, or deem necessary. Throughout the book there is the literal translation from the old system of doses to the metric system, constantly to the ridiculing of the metric system, and tending by one more book to prevent its adoption in the medical world.

The first part of the book is devoted to the treatment of acute poisoning by various well-known drugs, which can be found in any materia medica, while the toxicology of the newer drugs is not touched upon at all.

The article on drowning is good and is the more appreciated as it is so rarely found in medical books.

The article on food infection is excellent, but one wonders why it appears in a treatise on therapeutics.

The articles on drug habits, and on acute and chronic metallic poisoning are good. The gold cure for alcoholism is declared to be really a faith or mind cure, as it undoubtedly is.

Septicæmia and its fellow pyæmia are treated of, with surgical recommendations.

Erysipelas, of course, is admitted to be of microbic origin. For the treatment of this disease most everything is spoken of, but little strongly recommended. Are we still unable to say that such or such a treatment is undoubtedly the best, or must we still say that Dr. X. uses this, and Dr. Y. that remedy? In other words, this disease tends to recovery whatever the treatment, and when we say use antiseptic and sedative local applications, not forgetting the stronger iron preparations, as the tincture of iron, and reduce the temperature if necessary by ordinary methods, have we not said enough?

The reviewer is glad to see the sore throat with membrane treated of so closely with true Klebs-Loeffler diphtheria. The streptococcus membrane, except that antitoxin injection is not necessary, should be treated with the same local and systemic care, and with the same isolation, as is true diphtheria. The antiseptic and isolation precautions in diphtheria are all carefully laid down. Intubation is given in long detail, but the reviewer is surprised to see the antitoxin treatment placed under a separate heading when it should be part and parcel of the treatment of diphtheria.

It is unnecessary at this age of advanced pharmacy and perfectly representative alkaloids to print Trousseau's old prescription of "pulvis belladonnæ," etc. (it should be pulveris by the way).

Eleven pages of talk on whooping cough making the reader wonder not what is good treatment in pertussis, but wonder what is not. Then in one good paragraph the able writer sums up the best, and what we all know to be the best treatment, for this disease, and again one wonders the why of all the previous talk.

Influenza again leaves nothing unsaid, but we deprecate the continued writing of prescriptions as if the physician referring to this book could not use his own menstruum for ammonium chloride, or did not know how to flavor aqua. It is too much catering to the formulary books that are kept on desks of men unable to write their own prescriptions. The writer takes exception to the "harmlessness" of antipyretics in influenza.

The section on the exanthemata is very good.

The author gives us a very fine article on treatment of typhoid fever, and an article on cerebro-spinal fever.

In marked distinction to the long-drawn out treatment of whooping cough and influenza are the short, terse and up-to-date treatments of anthrax, hydrophobia and tetanus by the able author of these articles.

The writer on pneumonia believes in venesection in the first stage of the disease in very many cases. He condemns the use of aconite or of veratrum viride, preferring blood letting if the symptoms call for it. The treatment in detail is excellent.

The treatment of tuberculosis is a most perfect essay on the subject.

The article on syphilis is very complete and excellent, even the blood-serum treatment being described.

The malarial plasmodium is of course treated of in great de. tail, but the reviewer fails to find any excuse for the dissertation on quinine in a book on therapeutics. Neither is it apropos for a discourse on the various methods of causing quinine to enter the system, any more than such discourse on any, or all other The writer of this article speaks of quinine taken for two or three weeks after active malaria has disappeared for the prevention of a return as "expensive," certainly an unnecessary consideration. He recommends interrupted treatment and says "the fever reappearing during the course of treatment, this must necessarily be prolonged." It is mismanagement on either the patient's or the physician's part if the fever returns after once abating "during treatment." Hence, the reviewer believes the treatment of malarial fever should be continuous in spite of "expense." He recommends nothing to overcome the cinchonism in giving large doses of quinine, and the value of arsenic in some cases is not spoken of with enough emphasis.

The chapter on internal animal parasites is a very fine and complete practical delineation of cause, prophylaxis and treatment.

The article on rheumatism is rather disappointing. The value of electricity in chronic rheumatism is not mentioned. The article on gout from a dietetic standpoint is good, but the various prescriptions illustrating how lithium salts can be dissolved in syrup and water, or that cascara sagrada and aloes are good for constipation, and the copying of Sir Dyce Duckworth's anodyne application with minute details of "to be painted on with a large camel's-hair brush, and carded cotton to be superimposed with a towel bandage," seems too puerile for a book of this pretension.

The article on obesity is fine.

The chapter on diabetes reiterates the well-known discussion of diet, but its writer does not tell what to do for the emaciation, for the gastro-intestinal dyspepsia, or for the albuminuria sooner or later caused by the so-called dietetic treatment of diabetes mellitus. On page 580 the writer of this article once more gives us the unusual (?) prescription of "extracti cascaræ" and "extracti aloes" for constipation. It previously appeared for gout on page 547, and more pretentious, as "extracti cascaræ sagradæ" and "extracti aloes socotrinæ."

Now the reviewer does not intend to specially criticise any one writer in this book, but he does decry the putting of A B C prescriptions in a fine reference book of this kind.

The article on scurvy overlooks the facts that young children on artificial foods can develop this disease.

The discourse on the diseases of the mouth is very complete, except that the free and easy admixture in this article of diphtheria, once before treated of, and follicular tonsillitis, and even of other inflammations of the tonsils and throat is very questionable. The reviewer believes that follicular tonsillitis should be treated of in much greater detail.

The chapter on diseases of the stomach is one of the best parts of the book; it is very complete, and at the same time terse.

The diseases of the intestines are thoroughly and ably discussed by the writer on that subject.

Appendicitis is given considerable space and emphatically described. In its medical treatment the use of purgatives, even salines, is "strongly condemned."

The next chapter thoroughly discusses the troubled question of how to treat liver disorders, and the article on hepatic colic, and biliary lithiasis is very exhaustive and complete.

We next come to infant feeding. Infant foods are declared to be unreliable, and the proper preparation of cow's milk for bottle-fed infants is briefly described. Some space is also given to the care of children after weaning. The digestive disorders and dentition is next discussed; the latter very minutely, including the care of the teeth.

The treatment of the diseases of the upper air passages is thoroughly described by the author of that section.

We now come to the formulary for things that have been used in diseases of the bronchial tubes. However excellent the thoughts in this article may be they are so covered up by the

profuse recommendations of prescriptions that the writer has found useful, as to be of no use in isolating a useful drug or two.

On the other hand the article on diseases of the pleura is an able thesis on the subject and another bright section of this book.

The chapter on the treatment of diseases of the heart is as able and complete as we have learned to expect from this writer.

The section on the diseases of the blood and the ductless glands shows the usual complete work of its author.

The article on the kidneys is another complete section.

The writer on the treatment of nervous and mental diseases well and ably spends considerable time on prophylaxis. Neuritis and nerve disorders, as well as diseases of the spinal cord are carefully treated.

The article on epilepsy is exhaustive, and ably discusses the various treatments.

The short chapter on the treatment of accidents due to electricity is valuable, as is the chapter on the disorders of sleep. The section on the diseases of the mind is quite exhaustive, and in fact is a good summation of the best thought on the subject.

The section on treatment of the diseases of the skin, followed by that on the treatment of the disorders of pregnancy makes the book an elaborate and complete treatise on therapeutics.

As a whole the book represents a very fine collection in one volume of the best therapeutics of the day.

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A Manual of the Practice of Medicine. Prepared especially for students. By A. A. Stevens, A.M., M.D. Fourth edition. W. B. Saunders, Philadelphia.

We have been unable to compare this present volume with previous editions of this work, but a careful perusal indicates that this little book admirably fulfills its object and is what it purports to be—an excellent manual for students. Many physiological and pathological conditions and terms which are not to be found in most books of this character are here discussed with clearness and brevity. For the classification, which is rather unusual, we have only words of praise. The section on "Skin Diseases" is most useful, compact and lucid. There is much originality displayed in the whole plan of this volume.

Inebriety: its Source, Prevention and Cure. By Charles Follen Palmer. Fleming H. Revell Company. 1897. New York, Toronto and Chicago.

This is a clever little discussion on this most interesting topic,

from the psychological standpoint. The effect of environment and heredity upon the inebriate is touched upon. The plan of a cure has for its foundation a moral regeneration of the drunkard.

The chapter on "Moral Characteristics and Various Types of the Inebriate" presents pictures easily recognizable. The book contains an ingeniously elaborated "Diagram of the moral manifestations resulting from the normal and abnormal conditions of the nervous-mental structure."

## BOOK NOTICES.

American Year Book of Medicine and Surgery, 1897. Being a yearly digest of Scientific progress and authoritative opinion in all branches of Medicine and Surgery. From journals, monographs and text-books of the leading American and foreign authors, and investigators, under the general editorial charge of George M. Gould, M.D. Published by W. B. Saunders & Co., Philadelphia.

The Management of Tumors of the Uterus and Appendages Complicating Pregnancy. With a report of two successful cases. By B. Austin Cheney, M.D., Assistant Professor of Obstetrics and Gynecology in Yale University. Reprinted from the American Journal of Obstetrics, Vol. XXXV., No. 2, 1897. New York: William Wood & Company, Publishers, 1897.

Renal and Urinary Diseases. By Robert Sundly, M.D., Edin. Second edition. W. B. Saunders, Philadelphia, 1897.

Nineteenth Annual Report of the State Board of Health of the State of Connecticut. With the Registration Report for 1896, Relating to Births, Marriages, Deaths and Divorces.

The International Medical Annual and Practitioner's Index. A work of reference for medical practitioners. 1897. E. B. Treat, New York, publisher.

# YALE MEDICAL JOURNAL

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GENERAL PARALYSIS AND OTHER NERVOUS AND MENTAL AFFECTIONS FOLLOWING SYPHILITIC INFECTION.

By Dr. Adolf Meyer, Worcester Lunatic Hospital, Worcester, Mass.

One of the aims of medicine, as an empirical science, is to derive from the collected experience rules which may be trusted to hold in more or less identical cases. Absolute rules there are few; medicine does not enjoy the simplicity of mathematical sciences. Those who believe there are absolute rules in medicine in the sense of the absoluteness of mathematical rules are liable to serious practical lessons; but those who believe there are absolutely no rules are equally subject to error.

The views on the etiology of the most formidable of mental diseases, general paralysis, are thought by a few alienists to crystallize in one highly important rule, i. e., that general paralysis in the strict clinical sense of the word only occurs in persons who have acquired or inherited syphilis. Even if this statement had not its undeniable importance as a problem of etiological pathology and of hygiene, its evolution would be worth a short analysis as a good instance of the methods of medical argumentation.

Up to about ten years ago the claim of a post-syphilitic origin of general paralysis had only isolated supporters. As late as 1885, one of the largest reference works of medicine, le Dictionnaire Encyclopédique des Sciences Médicales did not even mention the word syphilis in the chapter on the etiology of general paralysis. Who will blame the ordinary physician for not thinking of

<sup>&</sup>lt;sup>1</sup> Alfred Fournier, les affections parasyphilitiques. Paris, Rueff et Cie 1894, p. 138.

such a connection between the two diseases, if "competent" students had overlooked the questions? The fact is worth mentioning because it characterizes the old statistics which might be adduced into the discussion. They deserve, as we shall see, a decided "cave."

Esmarck and Jessen (1857) and Kjelberg (1863 and 1868) declared syphilis as the unique cause of general paralysis, but they were ignored. For a number of years attempts were made to distinguish a metasyphilitic pseudo-paralysis from a non-syphilitic classical general paralysis. Much time and paper has been wasted over the discussion of these forms until Fournier withdrew his opinion and replaced it by the decided statement: general paralysis and locomotor ataxia are parasyphilitic affections, only differing by their localization.

In the meantime, Fournier, Erb and especially Moebius have collected their statistics on the relation of syphilis and locomotor ataxia. The contribution of Moebius, "Zur Lehre von der Tabes," contains a beautiful illustration of the psychology of the medical world and is to be recommended to all those who see in medicine not merely a heap of dead facts and more or less imperfect laws of natural science, but a noteworthy feature of the evolution of human thought and culture.

From among the series of papers which achieved for general paralysis what Moebius did for tabes, I wish to refer at some length to the study of Dr. Josef Adolf Hirschl, on the "Etiology of General Paralysis," published in the Jahrbücher für Psychiatrie und Neurologie, Vol. XIV., pp. 312-514.

Hirschl examines the histories of 200 men suffering from general paralysis observed clinically between October 15, 1894, and August 20, 1895. In 175 of these cases it was possible to get fairly sufficient information; in twenty-five no information about the previous life could be obtained—a fact not to be wondered at, since many of these patients are in no way in a condition to give an account of themselves, and if no friends can be found an anamnesis is unobtainable. Tables of these cases state time of observation, name, age, confession, social position, occupation, by whom the history is furnished, the condition of the cranium, objective symptoms of existing or previous syphilis, duration and form of the general paralysis and complications.

An analysis of all the factors in the "causes" which were ascertained in the 175 cases gives none that would be as frequently met with as syphilis. Especially psychical causes, mental overwork or worry, traumatism, acute infectious diseases,

and alcohol and lead intoxication may all enter as factors, but not with sufficient regularity and never alone, whereas syphilis has a remarkable percentage. Of the fifty-five statistics on this question only eighteen have a percentage of less than fifty; nineteen statistics reach more than 72% of syphilis. For us it is of importance to know how Hirschl proceeds in establishing syphilis in paralytics. He looks for:

- a. Evidence of existing syphilis. H. never observed primary and secondary symptoms in his paralytics. If they would occur they might be reinfection. Kiernan published several cases of this type several years ago without however bringing evidence that this syphilis acquired by paralytics was or was not reinfection. Tertiary syphilis—gumma—is found rarely.
  - b. Evidence of previous syphilis.
  - a. Objective residuals:
- 1. Residuals of sclerosis—permanence of an induration over years is a very rare occurrence and therefore useless for us. Scars are not always present and not always pathognomonic.
- 2. Scleradenitis lasts usually only one year, rarely many years. H. found it in six cases.
- 3. Characteristic gummatous scars—punched out and radiating slightly; one case of such scars on head with Alopecia.
- 4. Smooth patches of the base of the tongue, found in one autopsy, but probably not carefully looked for in the living.
- 5. Scars and defects of the soft and hard palate were present three times.
  - 6. Strictures of the rectum, none.
  - 7. Leucoderma of the neck, rare.
  - 8. Tophi of the periosteum, rare.
  - 9. Scars of one or both testicles, none.
  - 10. One case of psoriasis lingua.

These twelve patients with objective signs of syphilis— 6%—corroborate the general view that the paralytic process is not likely to develop in cases with strongly manifest syphilis.

- β. Evidence obtained by the anamnesis. The evidence is considered proving,
- 1. When, with an initial sclerosis, the subsequent mercurial treatment was carried out in a hospital.
- 2. With a history of ulcer followed by secondary eruption or other evidence of general infection.
- 3. With a venereal affection followed by typical syphilitic abortions.

Syphilis is probable:

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- . With a history of a venereal ulcer and subsequent sterility.
- 2. Where infection is denied, but where there is a history of repeated typical syphilitic abortions.

All other cases, including those of soft chancre, are to be excluded as negative.

The result of this careful investigation of the 175 cases of whose antecedents something was known, is as follows:

Ninety-eight or 56% had certainly had syphilis.

Forty-four or 25% had evidence of probability.

Thirty-three or 19% were negative.

It is of interest to look over just these thirty-three "negative" cases. Eleven admit venereal infection, three further cases had locomotor ataxia, one had had eruptions of the skin; among those who denied venereal infection two were not married, fourteen were; among the latter, four had no children, of six, children were dead, and in two families abortions had occurred. If Hirschl states that all these cases furnished a "negative" anamnesis, we surely cannot use them as crushing evidence against the syphilitic origin of paralysis.

The cleverest argument was introduced by Hirschl in the form of a corresponding analysis of the sixty-five cases of evident tertiary syphilis treated in the clinic of Prof. Lang between January, 1891, and August, 1895. The anamnesis shows:

Thirty-four cases (54%) of certain syphilis.

Six cases (9.5%) of probable syphilis.

Twenty-three cases (36.5%) negative both for acquired or hereditary syphilis.

This result undoubtedly speaks for itself and is a veritable "egg of Columbus" in this vexed question. Through it the problems concerning syphilis are at once pushed into the rank of the most important problems of public hygiene and of medicine.

For years there has been a complaint that general paralysis was surprisingly on the increase. Overwork, overstrain, through increased "civilization," have been accused as causes. There is undoubtedly much truth in this. But we cannot be satisfied with this statement, as it is utterly misleading. For one thing I find that the statistics of the Worcester Lunatic Hospital give the same percentage of general paralysis for the years 1867–1871 and the years 1891–1896, namely 5.5–5.6% of the admissions. Further, the above statement leaves quite unmentioned the proper status of the question, i. e., That syphilis seems to be a

far greater danger as the responsibilities of the individual in the struggle for existence become more difficult to bear, and more persons who have had syphilis (and those only) are afflicted with general paralysis than formerly. It appears therefore more important that steps be taken against the spreading of That the police is inefficient in this branch of public hygiene is evident. If anything is to be achieved, venereal diseases must be put under similar regulations as other infectious diseases, under the domain of a board of health with proper regulations. To this we should be driven, in view of the number of women infected who were not prostitutes, and the cases of general paralysis in adolescents on ground of hereditary syph-The two enemies of order in this direction: the influence of the men occasionally afflicted and the assumed aversion of those who think interest in public sexual hygiene beneath their dignity-should not deter the medical profession from rational measures. We hunt for the sources of typhoid fever; we should also hunt for the sources which create every year a large amount of insidious trouble in the health of individuals and families.

From a general pathological point of view a number of important questions arise, apart from the highly probable rule, that without syphilis, no general paralysis would exist. We find that the syphilitic process can involve the nervous system in two essentially different ways: it may involve largely the mesoblastic tissues, as in the occasional neuralgic pains during the first year, in syphilitic spinal paralysis, in syphilitic arteritis, the formation of gummata and syphilitic chronic meningitis; or it may involve the nervous tissue proper in the form of metasyphilitic nerve-degeneration (Moebius) such as locomotor ataxia and general paralysis. The mesoblastic, really syphilitic, affections have to some extent the character of local infections; they occur largely in the skin, the periosteal structures and the blood vessels; they are amenable to the anti-syphilitic treatment; where of course, arteritis has produced softening, nothing but improvement in the blood vessels can be expected, and the softening will remain and follow the special laws of regeneration of the organ affected.

The parasyphilitic or metasyphilitic affections are less amenable to specific treatment. Unless the findings of bacilli of Piccinino be verified, we must assume with Kraepelin and others that syphilis has in these cases created a specific disorder of general metabolism which causes degeneration of nerve-cells in a similar secondary way as the arteritis causes local softening.

According to this view a metasyphilitic "toxæmia" would be created on ground of which certain specially vulnerable apparatus are brought to degeneration, in the one the myotatic and pupillary reflexes, or the peripheral sensory neurones (at least the posterior roots and their intra-axial continuation and the optic tracts), either of the lumbar segment, or the ulnar distribution, or of the optic tracts only, or of the trigeminus or of most sensory neurones—various types of locomotor ataxia—in others especially cortical mechanisms—general paralysis; rarely the motor nuclei (hemiatrophy of the tongue, or atrophy of muscles through peripheral neuritis). Occasionally we find peculiar combinations of the distribution of the process; but pathologically we deal with one disease (metasyphilitic nerve-degeneration) with varying localization.

It is remarkable that the mesoblastic syphilitic affections usually exclude metasyphilitic affections. Few of the cases of general paralysis show signs of gummata and even of deep secondary lesions. Indeed, we know that especially insignificant primary and secondary lesions are followed by metasyphilitic disorders and one might be almost inclined to believe that there are germs of various dignity, two varieties, at the bottom of the two conditions. This could hardly be controlled unless statistics were at hand concerning the fate of patients infected from one It is certainly remarkable that not so infrequently husband and wife are affected by general paralysis; on the other hand the records of the Worcester Hospital furnish data on the occurrence of general paralysis in three brothers coming on at an age where the effects of a possible hereditary syphilis could be excluded. Unfortunately no data concerning the infection had been inquired into. It is perhaps not probable that they were infected from one source.

Further, within the group of the metasyphilitic affections, the prognostic dignity varies considerably. Locomotor ataxia very often remains free of cortical symptoms and may extend over a great number of years. Where optic atrophy occurs early the process has frequently been seen to be completely arrested (owing to the forced rest?) Typical general paralysis, however, is rarely arrested, although many alienists of experience will have seen one or more cases of more or less complete remissions and even now and then a very rare recovery. This does not change the fact that the prognosis of the cortical localization is that of a gradual progressive dementia and paresis running its fatal course within from few months to usually two to four years.

There is a justified tendency to make the scope of types of general paralysis very wide, to take into its range not only the classical exalted and demented forms of general paralysis, but also the dementia following actual syphilitic lesions as softening of the brain, such as I have observed especially in women. Clinically we meet with great difficulty concerning the prognosis of neurasthenia in patients who have had syphilis and who, perhaps, have a few symptoms of the "locomotor ataxia group." The prognosis in these cases is especially serious where the neurasthenia has not been constitutional but marked a plain change in character and health four to ten years after the infection. Where the neurasthenia was constitutional the prognosis is very uncertain. Many clinicians would call the former beginning general paralysis and not neurasthenia.

Finally I must mention the occasional occurrence of psychoses in the beginning of locomotor ataxia, psychoses not of the character of general paralysis, such as hallucinatory paranoia with delusions of persecution, or with "revelations" and transformation of the personality; in two other cases, one man and one woman, nocturnal hallucinations with marked and lasting affect of fear and religious delusions. One of these cases developed locomotor ataxia from the onset of the mental symptoms, and was discharged with tabes, but with perfect insight into his mental condition, and has been free of mental symptoms over a year; the other was relatively free of hallucinations for a number of years, but during the last six months of her life developed symptoms of general paralysis and died from erysipelas with slight cortical lesions of general paralysis. The cases of paranoia are still under observation but one of them is becoming tremulous (fifth year of the disease) and somewhat demented and expansive, so that it is not improbable that he will end in general paralysis. It is as yet difficult to say how these cases are to be explained. They are not unlikely patients in whom other causes might have brought about the same psychoses and the characteristic metasyphilitic process only begins with the classical symptoms of general paralysis. The prognosis seems grave. Whether, ultimately, general paralysis with its classical symptoms appears in all these cases, is uncertain.

## ACUTE DISEASE OF THE MASTOID. ITS RELA-TION TO THE MIDDLE EAR AND ITS SURGI-CAL TREATMENT, WITH CASES.\*

By Dr. Carl E. Munger, Waterbury, Conn.,
Assistant Surgeon Manhattan Eye and Ear Hospital, New York,
Visiting Surgeon Waterbury Hospital,
Fellow of the American Laryngological, Rhinological
and Otological Society.

The mastoid process of the temporal bone and its diseases are to be studied chiefly with regard to their relations to the tympanic cavity, to the brain, to the lateral sinus and to the facial nerve; in fact it is from these very relations alone that the mastoid presents very much of interest to us. As this is not an essay on descriptive anatomy and as we are all supposedly familiar with the construction of the mastoid, a few words will suffice to bring to our minds the facts necessary to make our study of the mastoid interesting or instructive.

#### ANATOMY.

The mastoid may be spoken of as a process of the temporal bone, containing a number of spaces or cells which are lined with mucous membrane, which is continuous with the mucous membrane of the tympanic cavity. The largest of these is called the mastoid antrum and which is ordinarily of a size sufficient to contain a medium sized pea, and is in direct communication with the tympanic cavity as its superior posterior part. This cavity together with the other spaces are lined with mucous membrane and contain air, and are called pneumatic cells. These smaller cells vary greatly in size and number according to the age and to the degree of pathological changes that have been going on. At birth there is only one of these cells present and which persists as the antrum. The other spaces become gradually developed until at puberty the full size and number obtain.

The groove for the lateral sinus lies at a distance, from the posterior extremity of the antrum, of from three to six millime-

<sup>\*</sup> Read before the Waterbury Medical Association, April 12, 1897.

<sup>&</sup>lt;sup>1</sup> Ref. Handbook of Med. Sciences, Vol. II., p. 613.

ters; it curves outwards and backwards and upon the degree of curvature depends the likelihood of its being tampered with during an operation undertaken to open the mastoid cells.

In a number of skulls, about four hundred I think, which Politzer, of Vienna, examined with regard to this point, he found that the curvature of the sinus seemed more pronounced in cases in which the mastoid was illy developed or when it was the seat of sclerosis, and the more developed the bones the more favorable position had the sinus as regards its remoteness from the external surface. In opening the mastoid cells it is to be remembered that the upper surface of the petrous portion of the temporal bone forms part of the middle fossa of the skull, so it is necessary to find the line of safety in this direction.

The linea temporalis' is such a line, as it has been found that the middle fossa does not dip down below this line, or at most a distance not exceeding one centimeter, so that any opening more than a centimeter below this line will not reach into the fossa.

With regard to the facial nerve it may be stated that in this region it lies in a bony canal, the Aqueductus Fallopii, which is situated in close proximity to the mouth of the antrum, and from its horizontal direction here bends sharply at a right angle and passes out through the stylomastoid foramen. It is quite deeply located in the bone, but is in relation with some of the mastoid cells, so that it may quite easily become affected when there is a caries of that part of the mastoid, but it is so deeply situated that it is unlikely that it will be injured by the drill, chisel or whatever may be used to open the cells.

#### ETIOLOGY.

The cases of mastoid disease are almost all of them secondary to middle ear trouble. Simple primary periositis of the mastoid I shall not take into consideration, as these cases do not properly fall into the category of affections that we are studying.

Küster gives as causes of primary mastoiditis: (1) Tuber-cular osteitis of the mastoid; (2) Acute infectious osteomyelitis; (3) Cholesteatomata, which may be formed (a) by a thickening and proliferation of epithelium, or (b) congenital dermoid cysts.

Primary mastoiditis is, however, very rare, except as a result of Cholesteatomata, and as it is often most difficult to determine

<sup>&</sup>lt;sup>2</sup> Ref. Handbook of Med. Sciences.

<sup>&</sup>lt;sup>3</sup> Ref. Handbook of Med. Sciences.

<sup>&</sup>lt;sup>4</sup> Diseases of the Ear, Buck, p. 304.

<sup>&</sup>lt;sup>5</sup> Annual of Universal Medical Sciences, 1890, Vol. IV., chap. 38.

whether these tumors have their origin in the tympanic cavity or in the spaces of the mastoid, we may for all practical purposes state that mastoid disease is a sequel of middle ear disease.

The freedom of communication between the tympanic cavity and the antrum is so marked that it is little wonder, that in cases either of acute or chronic middle ear inflammation, the products of inflammation should pass into the antrum and thence into the other pneumatic cells, setting up an inflammatory condition in these cells by the presence of unhealthy discharges, or that there should be an extension of inflammation into the cells from the middle ear, producing a discharge which in its turn produces pressure upon, and death of, the mucous membrane lining the cells and after that caries and necrosis of the bone itself.

#### MASTOID INVOLVED.

The mastoid may become quickly involved in cases of acute middle ear trouble, and may be affected during exacerbations of chronic middle ear inflammation or may become gradually affected during a long 'period of middle ear inflammation, and show signs of trouble only after many years of middle ear affection.

Cozzolini<sup>6</sup> states (1) that mastoiditis is usually a result of chronic purulent otitis, very rarely of acute purulent otitis, and more rarely still of lesions of the external auditory canal.

- (2) In all cases of this disease, granulations or polypi exist in the auditory cavities, the escape of pus from the tympanum into the external canal being thus prevented.
- (3) It is possible to cure cases of mastoiditis in these cases by removal of polypi and granulations and by thorough antiseptic treatment, without having recourse to severe operative measures.
- (4) Opening of the mastoid cells is absolutely necessary where neoplasms exist within the mastoid process or other osseous lesions, such as sequestra.

Ever since the first visitation of La Grippe, in recent years, the cases of mastoid disease have increased in number very markedly and the horizon of mastoid operations has correspondingly enlarged. The excessive severity of the onset of influenza when the middle ear is involved, makes it not at all unlikely that the antrum becomes very quickly attacked, much more quickly, in fact, than obtains when the inflammation of the walls of the tympanic cavity and its contents takes place from other exciting causes.

<sup>&</sup>lt;sup>6</sup> Annual of Universal Medical Sciences, Vol. IV., chap. 36.

#### SYMPTOMS.

The usual symptoms of mastoiditis, according to Green, are (a) pain in the mastoid on firm pressure, (b) oedema of upper posterior wall of external canal close to drum, (c) a feeling of fluctuation in mastoid (but this is of course very uncertain and unreliable), (d) continuance of otorrhea after all apparent causes have been removed.

In cases of acute mastoiditis a greater or less degree of fever may be present, but in the more chronic cases fever is usually absent, except where there is an exacerbation of the middle ear trouble, to which it is secondary.

Green found pus in twelve out of fourteen cases on which he operated on the mastoid, and where there were no signs of inflammation in mastoid apparent. He divides the cases of mastoid disease into six classes, but Buck's simplifies this very much, bringing the cases under three heads as follows:

- I. Subacute Condensing Mastoid Osteitis.
- II. Acute Diffuse Mastoid Osteitis.
- III. Chronic Ulcerative Inflammation of the Mastoid Antrum. Subacute Condensing Mastoid Osteitis is practically a sclerosis following a chronic purulent inflammation of the antrum, but may continue as an active process after the exciting cause is removed.

Acute Diffuse Mastoid Osteitis is an inflammation of the mucous membrane lining the air cells of the mastoid. An abundant secretion is present, which soon becomes purulent, and unless it finds a means of escape from the antrum and the other cells, a death of mucous membrane occurs, due to pressure, and following this more or less extensive destruction of the septa of the pneumatic cells, and later the caries may extend to the body of the mastoid itself, and in most favorable cases where there is so much destruction of fistula, may extend to the surface of the bone and become an outlet for the debris and a spontaneous cure result.

The third class of cases which Buck puts under the heading Chronic Ulcerative Inflammation of the Mastoid Antrum furnishes most of the fatal cases. The patient has had a discharge from the ear for years. Pus cells, epithelium, cholestearin crystals, etc., begin to accumulate in the antrum, at the same time the pneumatic cells are becoming small through chronic osteitis, the opening from the antrum into the tympanum gets stopped up,

Reference Handbook of Med. Sciences, Vol. II., p. 615.

<sup>8</sup> Loc. Cit.

pressure on the walls of antrum begins and ulceration and caries follow.

#### INDICATIONS FOR OPERATION.

In cases of acute middle ear disease where the pain is persistent after the usual means for reducing the inflammation have been intelligently tried; where although there may be no swelling and no redness of the tissues in the mastoid region, where there may not be even tenderness on pressure, and especially where after a free flow of discharge has been established through the perforated drum the pain still continues, it is imperative that the mastoid cells be opened.

In Schwartze's clinic the indications for opening the mastoid cells are acute inflammation of the cells with retention of pus, if after the application of cold by ice bags, or coil, and after Wilde's incision, the treatment not being continued more than a week, the edematous swelling, pain and elevation of temperature do not disappear.

Politzer<sup>10</sup> operates (1) in cases of acute purulent inflammation of the middle ear, where the persistent severe pain in the ear is relieved neither by means of the ice-bag or Leiter's cooling apparatus, nor by Wild's incision.

- (2) In cases of painful inflammation in the mastoid process, occurring in acute and chronic suppuration of the middle ear, where these are caused by stagnation of pus in consequence of contractions of the external meatus or of numerous growths filling up the tympanic cavity and covering up the perforation. The operation is necessary when several attempts to remove obstacles to the escape of the pus have failed, and especially in all cases of suppuration of the middle ear when the discharge suddenly ceases while inflammatory symptoms in the mastoid continue, and this even when the soft parts over the mastoid process are not swollen or infiltrated.
- (3) When there is persistent pain in the mastoid process and at the same time a bulging out of the posterior superior wall of the meatus, and after an incision of this suppurating wall of the meatus the mastoid abscess is either not emptied at all or only insufficiently, and the symptoms indicating retention of pus in the mastoid process remain unabated.
- (4) Obstinate pain in the mastoid, continuing for days or weeks without appreciable stagnation of pus, and external swelling; especially if the bone is very sensitive to pressure, as there

PRef. Handbook Med. Sciences, Vol. II., p. 617.

<sup>10</sup> Ref. Handbook Med. Sciences, Vol. II.

is probably a deep-seated abscess within the mastoid which does not communicate with the tympanum.

(5) As a vital indication in every suppuration of the middle ear, combined with inflammation of the mastoid, in which fever, vertigo, and headache are developed during the course of the affection, symptoms which may foretell the approach of a dangerous complication.

The opinion of this great Aural Surgeon should teach us that whenever there is a persistent discharge from the middle ear, especially if fetid in character and accompanied with severe and unrelievable pain in the mastoid region, that it is the duty of the surgeon to warn his patient for his safety that the opening of the mastoid cells should be proceeded to without undue delay. That the diseased bone and soft tissues should be thoroughly and completely removed by an operation that shall be radical and establish such a system of free drainage as will allow no further accumulation of diseased discharges. That the parts shall be left in such a condition that local treatment can be easily and thoroughly carried out. The dangers peculiar to the operation are, (1) opening into the lateral sinus, (2) injury of dura and possibly of brain tissue, (3) injury of the facial nerve.

The possibility of wounding the lateral sinus has been the bete noir in this operation and has, I fancy, kept many otherwise bold surgeons from going into the mastoid cells, except as a last extremity, and it is more or less traditional that a wound of the lateral sinus will in all likelihood rapidly prove fatal. If, however, the statistics of this feature are looked up, it will be found that like many other popular superstitions this one is, in great measure, unfounded. A surgeon, an assistant in Prof. Lucae's clinic in Berlin, told me that in about three hundred operations on the mastoid he had nine times opened the sinus and without harm to the patient. Prof. Gruber, of Vienna, made the statement that he had opened the sinus twice, each time without injury to the patient. However, I fancy, that any of us would much prefer to finish the operation without this complication.

Schwartze, Groenland, Jacobi and Knapp each report cases in which the sinus was opened with recovery of each, and recently many cases have been reported when the opening of the latens sinus was not followed by severe consequences.

As has been stated, no opening made more than one centimeter below the linea temporalis will enter the middle fossa. By observing this precaution, the brain and dura will be exempt from danger.

The facial nerve is protected by its bony covering, the Aqueductus Fallopii, and if its position near and below the mouth of the antrum is recalled, the danger of wounding the nerve is reduced to a minimum.

#### INSTRUMENTS.

Method of Operation.—The instruments used in opening the mastoid vary according to the habits and possibly caprices of different operators.

Thus Buck<sup>11</sup> prefers a drill when a small opening is required and a chisel for a larger opening.

Roosa<sup>13</sup> in the last edition of his treatise on the ear prefers a drill or a small trephine.

At a meeting<sup>13</sup> of the American Otological Society, July 20, 1886, Knapp, Noyes, Andrews and Gruning favored the chisel.

Green prefers mallet and gouge, then dental engine and burrs to enlarge the opening.

Politzer and Lucae both use chisels and gouges.

Schwartz advocates chisels and gouges. He does not believe in drills, saying that there is an element of danger in drills which does not obtain in the use of chisels, viz.—if the bone is soft there is much uncertainty as to the direction which the drill may take or the distance to which it may go.

(Wilson, of Bridgeport, has designed a trephine which is said to be very safe and easily managed.)

Schwartze says further that a narrow opening, such as made by the drill or trephine, allows only of a partial irrigation of the diseased cavity and soon granulations keep the fluid from flowing out through the artificial fistula.

Thus we see the chisel takes the prominence.

The operation itself consists of three steps—after shaving and cleansing antiseptically the mastoid region—(a) an incision in the skin from one to two inches in length down to the periosteum, about one centimeter behind the bony external meatus. This incision should have as its center the point opposite the bony external auditory meatus. (b) The periosteum is next incised and the field of operation is made clear by separating the periosteum as far forward as the bony external meatus, and superiorly to the linea temporalis. (c) The use of chisel and gouges in opening the cells.

<sup>11</sup> Medical Record, N. Y. 1886, p. 103.

<sup>13</sup> Treatise on Diseases of the Ear, p. 506.

<sup>18</sup> Med. Record, July 24, 1886.

<sup>14</sup> Med. Record, Aug. 3, 1889.

The antrum is usually the point we wish to reach. bering the superior line of safety, the linea temporalis, we make our opening in the superior and anterior quadrant of the mastoid process, from five to ten millimeters behind the meatus and about one centimeter below the linea temporalis. chisel should be used most cautiously, and held in an oblique direction, and when near the linea temporalis, in a direction downwards and forwards. The opening in the cortex of the bones should not be more than twelve millimeters in diameter. A funnel-shaped excavation should be made of a depth of twelve to eighteen millimeters, until the antrum is reached. times, however, in cases of much thickening of the bone it may be necessary to go to the depth of twenty or even twenty-five millimeters, but never deeper than this, as there would be great. danger of wounding the facial nerve or the labyrinth. Diseased bone and granulations should be carefully and thoroughly removed, and antisepsis strictly maintained. The after treatment consists of keeping the patient in bed, and keeping the wounded bone and soft parts open under careful antisepsis. Should the sinus be opened, the opening should be immediately tightly plugged with an antiseptic tampon and the operation suspended for the time.

The desirableness of early operation in these cases is at the present time a well recognized surgical fact, but this has been impressed upon my mind by two cases, which have come under my care and which will illustrate this doctrine in a marked degree, the one being operated on early giving a perfect result, the other showing a more or less permanent loss of function, due to too long exposure of the parts to the infecting pus, and the pressure consequent to its presence.

Case 1.—Mrs. H——, aged twenty-three years, married, came to my office March 24, 1896, with the history that three weeks before she had been seized with pain in the right ear, which continued until March 16, when there appeared a profuse discharge which had continued until the date of her coming under my observation. The pain stopped for two days when it recommenced and had been present ever since.

Examination of ear showed a large amount of pus in the external canal. The watch was heard only on contact. The tuning fork at the vertex was heard in the right ear and there was tenderness on pressure over the mastoid process. P. 90. T.

<sup>18</sup> Annual Universal Med. Sciences 1889, Vol. IV., chap. 46,

99°. The pain could only partially be controlled with a safe amount of morphine.

A thorough and frequent douching of the ear produced in twenty-four hours considerable relief from the pain and within three days the discharge from the external canal entirely ceased, but the pain which had been partially relieved continued and increased in severity until April 16, when I chiseled into the mastoid antrum and found a small amount of pus, which was evacuated, and some softening of bone of the mastoid cells, which was curetted.

The after history is entirely free from any untoward symptoms or complications. The wound was treated antiseptically and healed quickly. There was no more pain. The temperature did not at any time rise above F. 99.5°.

The patient was discharged from the hospital May 3, 1896, with the hearing in the right ear normal.

Case 2.—Tessie F—, age 15, was taken January 9, 1897, with headache and pain in the right ear, these appearing in a case of the Grippe; this pain was very severe and lasted a number of days. January 15, a discharge appeared from the right ear and at this time the pain was somewhat relieved, but if the discharge became blocked up the pain which was referred to the top and side of the head became intense and the patient would be delirious, or somnolent and cerebration was very deficient.

I saw her February 23, found the external canal of the right ear filled with pus, hearing nil., and much pain; cleansing this and inflation gave much relief for three days, but her condition became radically worse and I had her taken to the Waterbury Hospital March 4.

I opened the mastoid antrum using the chisel and mallet and evacuated at least two ounces of very fetid pus. I found that this pus cavity had a depth of two inches from the bone surface of the mastoid process and this determined that the abscess either reached into the tempero-spheroidal bone of the brain or at least had extended up to the brain and had been pushing the duramater before it. A very slight amount of ether was necessary and the patient came out of it in a short time and there was from that time on entire absence of pain, and of any untoward symptoms until one week after the operation, while the wound was being dressed, the patient gave a shriek, extended the head slowly backward with the hands and arms stiff and pushed backwards. She went into an unconscious condition, which was more or less complete for a week. The temperature went up

to 102 with a pulse of about 100, which at times was as rapid as 130 beats per minute.

The next day I found that she was almost entirely hemiplegic. She could not be roused, her pupils would not respond to light, she voided her urine in the bed and she could only swallow a few drops of liquid at a time. On dressing the wound March 13, there was no discharge from the opening in the mastoid and but little from the external auditory canal.

A probe would pass downwards and backwards inside the skull for a distance of at least five inches and at right angles to the surface of the mastoid. The probe would, as on the day of the opening, pass to a distance of two inches. There was marked ptosis of the left eye. The outlook seemed dark indeed. Between March 13 and April 3 she had two attacks of vomiting which lasted for about twenty-four hours. About March 25 she began to show a little improvement as regarded the amount of movement of left arm and leg and the pupil of the right eye responded slightly to light; she also spoke a few words.

April 5 she was removed to her home. April 6 I saw her. found her more comfortable than she had been, more responsive to outside influences, more movement in arm and leg, and she could answer questions, but would relapse into stolid indifference between times. Mastoid wound had healed. I saw her; I found a continued improvement. She could move her arm and leg when told to do so, before this movement had seemed involuntary when it occurred. Both pupils responded She could distinguish the number of figures held before her eyes (as she had done at my last visit). She could answer questions intelligently and would signify when she wished to attend to the wants of nature. The ptosis of left eye still exists. She is very thin, but has a good appetite; she swallows perfectly and is improving decidedly in every way. wound is solidly healed. There is no discharge from the ear. There is no pain in any part of the body. Pulse, temperature and respiration are normal.

# THE DIETETIC TREATMENT OF INFANTILE DIARRHOEA.\*

By O. T. OSBORNE, M.D., PROFESSOR OF THERAPEUTICS AT YALE UNIVERSITY.

Before entering upon a discussion of the part of the subject allotted to me I may be pardoned if I speak for a moment of the physiological and anatomical conditions of the child's gastro-intestinal canal. If I infringe at all upon the paper on ætiology I may be excused when it is considered the narrow path through which I must tread between ætiology and medicinal treatment of diarrhoeal diseases in the infant.

Of course the first question that arises is, What is the proper food for an infant? Rotch has taught us that it is well to consider the stomach capacity of a child, which varies greatly with the age as well as with the weight of the child. The stomach grows very rapidly the first three months after birth; slowly in the fourth month, where it remains until about the sixth month, and then begins to grow again. Fleischmann has shown that the capacity of the stomachs of artificially-fed infants is greater at a given age than are those of breast-fed infants. is undoubtedly due to the over-feeding of a bottle-fed child that is, an over-loading of its stomach until a condition of more or less dilatation occurs. A child with an abnormally small stomach for its age must of necessity be fed more frequently than a child with a stomach capacity proper to its age. In either case the child is not satisfied unless its stomach feels a slight sense of distention. Exact tables are given for the proper amount of liquid that should be given—that is, the stomach capacity for the various weeks and months of age of normal infants, but these tables can be so readily found I will not go into the wearisome recitation of figures. Also without doubt the most accurate means of ascertaining the condition of an infant as to the appropriateness of the amount and character of the food is by weighing it regularly week by week and watching its growth. As a rule the average daily gain for the first two months should be about two-thirds of an ounce; the weight of

<sup>\*</sup>Read at the meeting of the New Haven County Medical Society, April, 1897.

the child at birth should probably be doubled at five months, and trebled at fifteen months; the weight at one year should be doubled at seven years, and the weight again doubled at fourteen, according to Rotch.

In studying the digestive conditions in a child we cannot forget its nervous system which is much more active and excitable than that of an adult. The brain is fifteen times as large proportionately in the infant as in the adult; consequently, anything that tends to nervously excite or irritate the child will easily interfere with its digestion, whether this be external influences or some peripheral pain, as irritative conditions of the skin, teething, etc., to say nothing of actual pain.

It is stated that the absorption of oxygen is relatively more rapid than the production of carbonic acid in the infant, that there is a continued accumulation of capital in the formation of oxygen-holding compounds. The metabolic activity is more pronounced in the infant than in the adult; much of which goes toward the formation of the rapidly-increasing tissue. Also it is necessary for an infant to have repeated molecular interchanges to keep up its temperature. The extent of skin—that is, of surface exposure—is relatively greater in the infant than in the adult, hence the tendency to great variations in temperature. This is especially true as the thermotaxic center in an infant is not well-developed, and the dilatation and contraction of its peripheral capillaries are not regulated by the temperature of the atmosphere. Thus the internal temperature can be easily modified by external conditions.

The salivary secretion is slow in its establishment, and at first weak in its amylolytic power, and is not well established until the end of the first year. The same is true of the pancreatic amylolytic action.

In considering the value of a food and the adaptability of a food to each individual child we must take into consideration the condition of the bowels—that is, the character of the intestinal discharges. In the first few days of infant life meconium is mixed in with the intestinal movements, after which period, with human milk, or with milk prepared according to the analysis of human milk, the discharges should be of golden yellow color, unformed, of medium consistency, and may, on exposure to the air, take on a mild greenish-yellow tinge. In early infancy there should be from two to four discharges daily with a gradual decrease to one stool in twenty-four hours. The color changes to brown when amylaceous or albuminoid food is added to the child's diet.

As we well know changes in the temperature affect the condition of the child's bowels we cannot but take careful consideration of the proper clothing for an infant. Any exposure of the body or limbs of infants, or young children, is certainly unwise. While the infant should not be so hampered that it cannot properly develop its muscles by free movements, and also while tightly binding clothing should not be allowed, still the infant must at all times be warm. On the other hand, too much bundling of a child, causing it to become too warm, is also detrimental to a child's health.

While young children should receive fresh air as soon and often as it seems proper, still the exposure of young children to inclement weather, damp weather, intensely cold or windy weather, just for the sake of giving a child daily out door air, is unjustifiable, and is absolutely against the physiological condition of a child, which requires that it shall not be exposed. Babies born in Winter should not be taken out of doors too soon.

It is a too well-worn axiom, other things being equal, to dilate upon the advisability of a mother nursing her own child, neither is it necessary for me to note the contra-indications to maternal feeding, except to call attention to the fact that nervous disturbances of the mother may so affect her milk as to upset the digestion of the child. By nervous excitement she can change the relative proportions of albumin, caseinogen and fat in her milk. The effect of various drugs on the milk secretion of the mother must not be forgotten; they may diminish the amount and interfere with its character, and may actually be excreted in her milk, thus affecting the child; this is especially true of cathartic drugs.

From a dietetic standpoint we may consider that the causes of diarrhœal diseases are over-feeding, too frequent feeding, improper foods and impure foods. We may state as a general rule, that children nursed by their mothers are often under fed, while children bottle-fed are generally over fed. Over feeding is particularly to be avoided in Summer time, at which period of course diarrhœal diseases are most frequent. It has also been stated not to be a bad plan to diminish the strength of a food, and to increase the intervals of feeding during the hottest weather. Too frequent nursing of the infant, or allowing the infant to sleep at its mother's breast at night, nursing when it pleases, is certainly a pernicious habit, both for mother and child. Also the allowing of a child to go to sleep with a bottle of milk at its mouth is one of the most frequent causes of diarrhœa. The inter-

vals of feeding should be regular in the day time, and at regular prolonged periods at night, the frequency depending upon the age of the child and the estimated capacity of the child's stomach. As to the length of lactation, rarely is it advisable for a mother to nurse her child longer than the first year; the milk at that time becoming so modified as to be of less value for the nutrition of the child, cow's milk and starch in some form being much better adapted for this stage of development. The advisability of a mixed feeding during any period of this first year can only be decided by the conditions in each individual case. The indication that a child is prepared to digest and assimilate other than liquid food is evidenced by the eruption of six or eight incisor teeth, which according to Rotch probably corresponds to the development of the pancreatic secretion.

The continued use of improper foods for children as a cause of diarrhœa I will not enter into, as the paper on Ætiology has treated of this cause. I may state my opinion that outside of the mother's milk cow's milk modified is the best food we can give a child. Dilution of the cow's milk with plain water seems to break up the curd of the milk as completely as any other diluent. Peptonized milk I believe will meet certain conditions of the gastro-intestinal canal, but as a regular diet is probably not advisable. Theoretically an infant cannot properly digest starch, and therefore should never receive it; practically we occasionally find a child that does well on some starchy preparation of food. Barley water and oat-meal water are perhaps the best diluents for cow's milk towards the end of the first year.

At the beginning of the second year the amylolytic function of the infant has become fully developed, and starchy foods should be added to its diet. Towards the end of the second year, and from then on—that is, at the period of the eruption of the last teeth of the first set, greater and greater varieties of food must be given. Some children doing better on large quantities of starch, and others on larger proportions of pro-Weak broths, bread and milk, rice, baked white teids. potato, and eggs, become the articles of food at this period of Baked apples, or some other thorthe child's existence. oughly cooked simple fruit, may be added to the infant's diet, especially if it is constipated. It is needless to say that candy and cake, and sweet bits of all kinds should never be given the child even as a taste; though in small amount they can but do harm, and at best only create an appetite and desire which cannot be satisfied.

In preparing the artificial food of young infants, let me emphasize the necessity for the addition of a slight amount of salt to each feeding.

There seems to be a predisposition to diarrhæa in the first two years of life, which lessens as a child grows older. This predisposition of course is the greatest during the Summer months, consequently, as can be gathered from the previous portion of this paper prophylaxis is of the highest importance in the consideration of this condition, namely, diarrhæa. Consequently, added to what has been already stated, sterilizing the milk where there is any doubt whatsoever of its purity, and careful care of bottles and nipples of bottle-fed infants, cannot be too rigorously insisted upon.

Diarrhœa is only a symptom and never a disease.

A diarrhœa beginning from a dietetic standpoint, the first thing to be noticed is the color and character of the stools. They may be clay colored, due to a diminution in the amount of bile and to undigested fat. A light green color may be due to a change after the fæces have been passed; we may find blood, mucous, shreds of membrane, yellowish white lumps seen in undigested fæces, and improperly-digested proteid material. Of course the color of the discharges may be changed by drug's that have been given. They may become colorless and fluid as water. The odor of the discharges of milk-fed infants is comparatively slight, but is much stronger where starchy and proteid material have been added to its diet. The indication for treatment then being that where the odor is exceedingly bad to withdraw all sugars and proteids and fats. Disturbed bowels arising from intestinal indigestion can mostly be referred to the duodenum. Treatment of course for this condition is simple that is, the giving of a laxative, and regulating the diet strictly according to age and condition of patient.

Any diarrhœa in a young child should call for immediate attention. A simple diarrhœa neglected may cause emaciation and a serious condition of the bowels, and a large number of our severe cases of diarrhœa in infants come to us after a period of neglect.

Chronic inflammation of the duodenum can only be treated by proper regulation of the diet, proper arrangement of clothing, with considerable warmth to the bowels, and fresh air according to the season.

In any case of diarrhoea in an infant the treatment should be a mild cathartic, absolute quiet and rest, withdrawal of all food from twelve to twenty-four hours, depending upon the strength of the patient, giving the child sterilized water, or if we decide that the fermentation or indigestion or irritation is due to proteid decomposition, barley water should be given. How soon we should begin stimulation or medicinal treatment I will leave to the next paper on that subject. Even the use of lime water, and its objects, I will not go into.

At birth the meconium is sterile, but infection by the mouth or rectum quickly occurs, and in a short time almost any form of bacteria may be found in the discharges, but chiefly some putrefying forms such as the proteus vulgaris, according to Jeffries. Soon with the beginning of the milk diet only two kinds of bacilli are regularly found, the bacillus lactis ærogenes, and Brieger's bacillus, but when the infant begins to take a mixed diet many other bacteria are found in the intestines.

A diarrhœa is often caused by fermentation in the intestines without any particular inflammatory condition. This has been called fermental diarrhœa, and includes those diarrhœas which are caused by acid fermentation and albuminous decomposition which are produced by micro-organisms, and are probably the cause of a large amount of all diarrhœal diseases of young children. Hence the necessity and the advantage, while we are treating the condition in the intestines, of preventing by sterilization other bacteria from gaining access to the intestines. It is stated that most of these diarrhœas due to bacteria are raised and grow in the decomposition of proteid media; toxins are formed by the development of these micro-organisms in the soil formed by decomposition products adhering to the mucous membrane of the intestines.

While theoretically the administration of so-called bowel-antiseptics is a correct treatment, as a matter of fact it is still a subject of great discussion as to how much antisepsis we cause in the bowels. Consequently, by cleaning out the decomposition material already in the bowels, and preventing the addition of more material to take on decomposition as soon as it meets this media in the bowels for its growth, theoretically should aid in curing the condition. Secondly, we know that the cause of this decomposition with all of its products is chiefly due to proteid decomposition. If we change the diet to a starch diet in these conditions—namely, not conditions of duodenal indigestion, but conditions of fermentation and decomposition in the intestines—we change the media in which these germs are growing to that in which they do not thrive. This is probably the reason that

some children with diarrhoea do better on such starchy foods as granum, for instance, than on milk.

When a child has once had fermental diarrhoea in Summer it easily recurs, hence, the diet should be very carefully regulated for some time.

The advantages derived from careful cleanliness of napkins, changing as soon as soiled, and from properly applied baths—i. e., proper temperature and proper manner of applying them—should never be forgotten.

When we must withhold food for a time on account of a fermental diarrhoea, thirst must be allayed by rice water, or barley water, or toast water, or even plain boiled water, all given in small quantity at a time, and if in very small amount, cold.

When we begin food it must be milk peptonized, very much diluted, often with lime water added. In beginning food it is best not to feed too often, or to try too many things, and well not to give up a food as improper until a thorough trial has been had.

Diarrhœas of young children are most frequently diarrhœas of indigestion or of fermentation, hence, true cholera infantum is a rare disease, and probably occurs only in the first two years of infant life. In this disease food as such does not digest, and hence should for a time be withheld, but fluid must be supplied to the tissues. Washing out of the stomach and intestines is indicated, also warm baths and warm packs, in addition to efficient and quickly-acting medicinal treatment.

By ileo-colitis is meant an inflammation of the intestines which may be simple, follicular or membraneous.

The treatment so far as food goes should for the first twenty-four hours be the same as for fermentative diarrhœa—viz., complete withdrawal, with boiled water kept sterile, and on the second or third day a sterilized milk in small amount. High injection of plain or medicated water is one of the best treatments, with, as soon as possible, change of air.

In order to confine myself strictly to my department in this discussion I am afraid that I have had more to do with prophylaxis than with actual treatment of diarrhoea, but I may be pardoned when we consider that about three-fourths of all deaths of infants under one year occur in the bottle-fed.

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Prof. Koch, of Berlin, announces in an article dated November 14, 1896, but which has only recently appeared in the Deutsche med. Wochenschrift for April 1st, a new tuberculin which in its preparation and properties differs much from his original tuberculin. The latter, as is well known, consists of a glycerine extract of a culture of the tubercle bacillus, freed from the organisms, and whatever curative properties it may possess are entirely overshadowed by the marked reaction which it produces when injected into a person or animal having tuberculosis. For this reason its use has been limited chiefly to diagnosis of the disease, especially in animals, but also to some extent in human beings, as it will produce the reaction in the very early stages of the disease before the diagnosis from physical examination can be made.

The original article describing the new tuberculin is not at hand, but the most recent medical journals contain satisfactory though brief summaries of it. From his extended study of the tubercle bacillus, Koch concluded that for some reason it can only with great difficulty be made to part with the peculiar substances which it forms in its growth and which must be available in order to bring about an antitoxic reaction in the body, and that the tenacity with which it retains these substan-

ces is probably due to a comparatively thick outer protecting covering of the bacillus. To destroy this integument pure cultures, as virulent as possible, are taken and desiccated in a vacuum, and then triturated in an agate mortar with an agate pestle for a long time. In this way the bacilli gradually become pulverized, losing their contour. The material thus obtained by trituration is mixed with distilled water and put into a rapidly revolving centrifugal machine for half an hour. This separates the mixture into a transparent opalescent upper portion, free from bacilli, and a thick lower portion containing the undissolved residue. The upper portion is separated from the lower, which is again dried, triturated, and treated in every way as above described, the process being repeated until no undissolved residue remains. This gives a series of transparent, slightly opalescent fluids, the first one of which Koch has shown to have all the properties of his old tuberculin, but all of the others are alike and quite different from the first. These constitute his new tuberculin. This, unlike the old tuberculin, does not produce any reaction when injected in proper amounts into tuberculous subjects, and his experiments indicate that it has immunizing and curative properties. The new tuberculin is furnished in solution in 20 per cent glycerine, which for use is to be diluted with physiological salt solution. The initial dose is o.oo2 milligramme, which is repeated every second day and gradually increased in amount, if no fever is produced, to onehalf or one milligramme.

The immunizing action of this has been tested on animals. Susceptible animals have been rendered immune so that repeated inoculations of virulent cultures of the tubercle bacillus failed to produce the disease in them. The curative property of the new tuberculin has been tested on guinea pigs and man. In the former a cure has been effected in three weeks, provided the disease was not far advanced. In man apparent cures, or what Koch cautiously speaks of as improvements, have been repeatedly obtained in suitable cases. The most marked success has been obtained in tubercular lesions of the skin. The new tuberculin seems of little use in patients with a temperature above 100.4 degrees F. or in those with a secondary infection. There are no unpleasant general symptoms attending its use in proper doses and abscesses are not formed.

However much skepticism may be entertained regarding this new tuberculin, because of the failure of the old tuberculin to meet the expectations regarding it, all will admit that the hope of securing a cure for tuberculosis must be based on the exact work of such a master of bacteriological science as Koch, rather than on the various quack nostrums which have all too frequently been thrown upon the market and in which too much credence has been placed by many, and anything from him will be given due weight by the profession.

We take pleasure in announcing the election of Julian H. Hurst and Frank P. Heery of the Junior class, and James Pullman of the Second Year class, to the Associate Editorial Board. Honorable mention is made of the work of J. S. Loomis, A. D. Margosian, and P. D. Bunting.

#### MEDICAL SOCIETY REPORTS.

New HAVEN COUNTY MEDICAL SOCIETY.—The annual meeting of the New Haven County Medical Society was held at the New Haven House, this city, April 15th. There was a large number of members present. The meeting was called to order by President C. S. Rodman. After the minutes of previous meeting had been read and approved the Committee on Credentials made a favorable report on the following names: W. M. Kenna, M.D., New Haven; A. K. Brennan, M.D., New Haven; R. S. Goodwin, M.D., New Haven; L. C. Sanford, M.D., New Haven; Geo. Holbrook, M.D., Waterbury; J. R. Poore, M.D., Waterbury; W. H. Crowe, M.D., New Haven; J. L. Holroyd, M.D., Waterville; A. McNeil, M.D., New Haven; J. L. Moriarty, M.D., Waterbury, and G. W. Russell, M.D., Waterbury. They were all elected to membership of the society. tion for discussion was that of "Diarrhœa in YoungChildren."

Dr. Hughes in his paper on the etiology said that improper diet was the usual cause, and that bottle-fed children seemed to be more liable to this trouble than children breast-fed. Substitutes for mothers' milk he asserted were injurious. He quoted from authorities who called heat collapse and cholera infantum the same disease, but in his practice he had seen many cases of diarrhœa without heat collapse. "Bacteria as a cause:" He has found the typhoid bacillus and the bacillus of tuberculosis, others have found the bacillus coli communi in the intestinal discharges. Milk, water and the air are the media in which these bacteria are transmitted to the child. Breast-fed children are more free from attacks of mild intestinal catarrh than the

bottle-fed child, because their digestion is healthier and their milk is free from bacteria.

Dr. O. T. Osborne's paper on dietetic treatment will be found in this issue, under the head of original articles.

Dr. N. R. Hotchkiss on the medicinal treatment said that in the simple cases he used the simple diarrhoea treatment, removed the cause, such as undigested food, contaminated milk, etc., with castor oil, or the usual cathartic, calomel, followed by comp. tinct. opii. Astringent should not be used. subnitrate is good. In inflammatory diarrhœa, where there is an elevation of temperature and a lowering of vitality, there should be an abstinence from food for several hours, and a removal of the surplus food in the alimentary tract by flushing out stomach and intestines with saline solutions of a temperature of 80 degrees. Two to five grains of calomel daily for twentyfour to thirty-six hours. If depressed, alcohol or brandy indicated. In all cases first clean the bowels and then one may use bismuth subnitrate. Salol can be used combined with bismuth when the discharges are fluid or watery. Opium when used should be given alone and must be used cautiously when the stools are offensive, as they are usually when such cases are accompanied by high temperature, etc. Cold baths may be given to reduce temperature, the water being at 80 degrees and lowered to 70 degrees or even 65 degrees. In cholera infantum should first empty stomach; treat heart and nervous system; replace fluids; reduce temperature, and treat other symptoms as they arise.

In the discussion which followed Dr. Foote said that the clinical aspects of such cases vary. There are two types of poisons: First the poison which affects the nervous system, in which we have cerebral disturbances, coma, etc. Second, the poisons which interfere with the digestive apparatus and act as gastro-intestinal irritants. We may have cases in which there are no cerebral disturbance and in others where they are acute and dangerous. These acute cases are usually accompanied by muscular twitching, coma and in the majority of cases the abdomen is retracted. It is impossible in some cases to treat the vomiting which occurs. Dr. Foote has used silver nitrate with good results in many such cases.

Dr. Moody said that she had treated successfully many cases having cerebral symptoms with morphine, or ammonium carbonate. In the homes of the poor she had found nux vomica to be an invaluable remedy for empyting the intestinal canal. To

soften the curd in cows milk, when the stomach of child is superacid, she has used lime water. Minute quantities of borax will also make a softer curd.

Dr. Fleischner: Climatic conditions seem to determine the fatalities of this disease. Very hot Summers appear to influence the progress of the disease. In some years a single hot day will shoot up the number of cases to an alarming extent. We see more cases among the children of the poor, those in the cities, and among the bottle-fed, than in the children of the better classes, those living in the country, and the breast-fed. There are three kinds of cases: 1st, Cholera infantum, with the acute cerebral disturbances, described by Dr. Foote, and which are always fatal. 2d. Infantile diarrhoea, which may be mild or severe. 3d. Protracted infantile diarrhoea, in which the body wastes and the skin shrivels, and which seems bound to terminate fatally, but the child usually gets well. In the first case the treatment is as for meningitis, and the doctor said he had never seen a recovery. "In the mummified cases, the third, I have tried all kinds of treatment and cannot say which is best as they all seem to recover regardless." In the second class treat the individual and the prognosis may be based upon the prevailing mortality; the treatment being fresh air, mountains or seashore; change milk. Dr. Fleischner said that he had seen children do better in some cases where artificial food had been substituted for mother's milk. He has used many drugs, but the most satisfactory medication is from bismuth and opium.

Dr. Eliot said that he agreed heartily with Dr. Fleischner in that bismuth and opium were the best drugs to be used in these troubles. Fresh air is also a requisite. Boiled milk should be used and in some cases there is an advantage in peptonizing the milk. The child should have rest and the temperature should be watched, a high temperature indicates the necessity of cold applications though the extremities should be kept warm.

Dr. Thompson said he had seen a recovery from cholera infantum by treatment with cold applications.

Dr. Hughes said that in the treatment of certain cases where the temperature is high cold applications usually give recovery. "I had one case where the temperature was 106 degrees; I packed the child in ice and then immersed it in cold water. This repeated resulted in recovery. In cases where the heat theory had been tried the results were bad."

Dr. Hotchkiss: Reduce the temperature by rapid methods when in severe cases it reaches 105 or 106 degrees,

The question for discussion at next meeting is "Diseases of Tonsils," assigned to Drs. Alling and Munger.

The Fellows elected to represent the society: Dr. Barbour, Dr. Lambert, Dr. Hughes, Dr. Bellosa, Dr. Gilbert. Alternates elected were Drs. Tuttle, Bullard, Smith, Klencke, Beckwith.

Dr. Townsend was reëlected Secretary of the society by a unanimous vote.

Dr. E. W. Smith's resignation from the Committee of Censors was received and accepted.

Adjournment.

NEW LONDON COUNTY MEDICAL ASSOCIATION.—The 106th annual meeting was held at Norwich, Conn., April 1st, 1897. The meeting was called to order by the President, W. S. C. Perkins, M.D., of Norwich, with a large attendance present.

Two new members were elected—Dr. Carl A. Williams of New London; Dr. James J. Donahue of Norwich.

Minutes of the two previous meetings were read and approved.

Officers for 1898 were elected as follows: President, Abiel W. Nelson, M.D., of New London; Vice-President, William Witter, M.D., of Norwich; Clerk, Charles B. Graves, M.D., of New London. The following members were chosen Fellows of the Connecticut Medical Society for 1897: First Fellow, C. V. Buttler, M.D., of Norwich; Second Fellow, G. R. Harris, M.D.; Third Fellow, C. E. Brayton, M.D., of Stonington; Fourth Fellow, W. A. Korn, M.D., of Norwich; Fifth Fellow, E. P. Douglass, M.D., of New London; First Alternate, C. H. Perkins, M.D., of Norwich; Second Alternate, N. L. Drake, M.D., of Lebanon; Third Alternate, M. E. Fox, M.D., of Montville; Fourth Alternate, A. Peck, M.D., of Norwich; Fifth Alternate, C. F. Ferrin, M.D., of New London.

Drs. P. Cassidy of Norwich, C. E. Brayton of Stonington, and F. N. Braman of New London were chosen delegates to the American Medical Association.

The present Board of Censors and County Reporter were reëlected for another year.

The report of the Censors was read and approved.

Dr. La Pierre presented resolutions which were passed by the Association expressing its disapproval of all methods by which discrimination is made in the matter of compensation in favor of patients belonging to certain orders or societies. This was followed by an interesting paper by Rush W. Kimball, M.D., of Norwich, the Annual Dissertation, entitled "The Forceps in Labor." Much interesting discussion was provoked by the reading of the paper.

One death was reported, that of Dr. W. R. Babcock of New London. Dr. E. C. Chipman was appointed to prepare an obituary notice of the deceased.

Delegates to the several County associations were appointed by the President.

Dr. E. P. Douglass of Groton read an interesting paper entitled, "A Case of General Eczema from Suppression of Urine and Glycosuria." Some very fine X-ray photographs were shown by Dr. W. T. Browne.

HARTFORD COUNTY MEDICAL ASSOCIATION.—Dr. Jarvis K. Mason of Suffield opened the meeting in the absence of President Jarvis, who came in later. Report of the Clerk, Dr. Geo. K. Welch, showed the present number of members to be 134.

The first paper was read by Edwin A. Down, M.D., upon "Some Essentials of Diagnosis in Insanity." He said that the normal process of thought in forming judgment needed the following essentials: Sensation, perception, memory, ideation, reasoning. A diseased condition of any of these gives an unbalanced mind, and memory is particularly apt to be the part diseased. Other conditions overcome or master these, such as emotion, will, reflexes. These may be diseased and produce insanity. Insane people lose control of the will or the reflexes: thus may not be able to ride a bicycle or to walk. Mind uses all the essentials of thought, sensation, perception, memory, ideation, reasoning. Thus mind is evolution, not a phenomena, and if any of the essentials of development are missed the person is not sound. So in making a diagnosis all the essentials of the normal mind should be examined. These may be increased or decreased in power individually, and in either case a deviation from the normal means

Ansel G. Cook, M.D., read a dissertation upon "X-Rays From a Practical Standpoint." Can we use the X-ray machine for practical benefit in medicine? is the important question. The surgeon should use it himself, or oversee its use, for he only can best interpret it. The present instruments need much improvement, but will finally be very important in medical practice.

Dr. Taft opened the discussion by saying that in fracture the

X-ray would undoubtedly prove very useful, for frequently where contour and external examination shows apparent good position the X-ray shows abnormal position that would otherwise pass unnoticed.

Dr. Simpson reported a case where no dislocation was present, but X-ray indicated that such was the case, so the new ray is not always sure of diagnosis.

Dr. Sullivan: Case of X-ray directed upon a leg showed a sequestrum with distinct necrotic area, yet upon operation a perfectly normal tibia was found. Dr. Fuller: X-ray is not successful in all hands; but must perfect our knowledge before we are sure of the usefulness of the apparatus. Dr. Johnson: Impressions taken at right angles to each other best determine the exact condition. We had better go to experts for the use of this rather than all get the apparatuses individually.

Dr. S. W. Irving read a county report upon disinfectants. Sulphur fumes as generally used is not valuable, because, first, the method of use is wrong; second, the work is often left to those who are inexperienced. Sulphur candles are insufficient unless six or more are used. If used rightly sulphur is a sufficient disinfectant, and room should be filled with steam first and then the sulphur burned.

Dr. Fuller: Boards of Health should supervise disinfections themselves.

Dr. Abrams: Formaldehyde is of rising value as an antiseptic, used in one-fourth to one-half per cent solution; is cheap and easily obtainable.

An obituary upon Dr. P. W. Ellsworth was read here by Dr. Stearns. Dr. Ellsworth was born December 5, 1814; graduated from Yale in 1836 and from College of Physicians and Surgeons is 1839, afterwards serving an appointment at Bellevue. After practicing in Hartford some years he went abroad to study general surgery, and returning to Hartford he attained much reputation as a surgeon. He was the first one to perform a capital operation (viz.: that of amputation of thigh) while the patient was anæsthetized with nitrous oxide gas. In 1854 he delivered the Commencement address before the Medical Department of Yale University. He was a writer of many articles for medical journals. He was a member of the Connecticut Medical Society. and honorary member of the New York Medical Society. Dr. Ellsworth's grandfather was Oliver Ellsworth, first Chief-Justice of the United States, and his grandfather on his mother's side was Noah Webster, LL.D. He appears to have inherited some

of the physical vigor of his renowned ancestry. He was industrious, careful and methodical in the discharge of his professional duties as a physician and surgeon to an advanced age.

Dr. W. G. Murphy read the last paper upon "Cow's Milk in Infant Feeding." The society voted to recommend it for publication.

A committee of five—Dr. W. G. Murphy of East Hartford, and Dr. A. E. Abrams, Dr. Chas. E. Taft, Dr. A. J. Wolff and Dr. E. K. Root of Hartford—were appointed to consider the matter of education of the people upon the care of the milk supply, and to try and arrange for the furnishing of sterilized milk for children and pure milk to families.

The election of officers resulted in the choice of President, Dr. Jarvis K. Mason of Suffield; Vice-President, Dr. James Campbell of Hartford; Clerk, Dr. George K. Welch of Hartford; Censors, Dr. Everett J. McKnight of Hartford, Dr. Joseph A. Coogan of Windsor Locks, Dr. Samuel W. Irving of New Britain; Fellows, Dr. George F. Lewis of Collinsville, Dr. F. H. Whiton of Manchester, Dr. Gideon C. Segur of Hartford, Dr. S. R. Burnap of Windsor Locks, Dr. E. P. Swasey of New Britain; Alternates, Dr. Thomas F. Kane, Dr. C. C. Beach, Dr. T. F. Simpson of Hartford, Dr. Walter G. Murphy of East Hartford, Dr. J. S. Stone of New Britain: Delegates to American Medical Association, Dr. A. E. Abrams, Dr. Marcus M. Johnson, Dr. Joseph E. Root, Dr. D. F. Sullivan, Dr. Mary S. Tudor. Dr. John S. Rose of this city was chosen Dissertator for next year, and Dr. Samuel W. Irving of New Britain alternate.

New members admitted to the association were Dr. Levi Bennett Cochran, Hartford, University of Pennsylvania 1893; Dr. James Ward, Hartford, College of Physicians and Surgeons (Baltimore) 1895; Dr. James Henry Naylor, Hartford, University of Vermont 1895; Dr. Charles Porter Botsford, Hartford, Yale Medical School 1894.

FAIRFIELD COUNTY MEDICAL ASSOCIATION.—The one hundred and fifth annual meeting of the Fairfield County Medical Association was held at the rooms of the Y. M. C. A. in Bridgeport Tuesday, April 13th. Dr. J. W. Wright of Bridgeport, the President of the Association, was in the chair.

Routine business occupied the first part of the program, and this included the President's address which was an able and interesting discourse on "Sign-posts in Medicine." This was followed by the election of officers and the ballots showed the election of the following men: Dr. W. H. Donaldson of Fairfield, President; Dr. J. C. Lynch of Bridgeport, Vice-President; Dr. W. W. Gray of Bridgeport, Clerk; Dr. W. B. Coggswell of Stratford, County Reporter; Dr. W. S. Watson, Dr. F. B. Baker and Dr. J. W. Wright, Censors; Dr. R. A. Lockhart and Dr. W. B. Cowell, Dissertators, and Dr. J. F. Smith of Newtown, and Dr. Tukey of Bridgeport, Alternates. Delegates were also elected to the meeting of the American Medical Association and to the annual meetings of the various county societies.

The following new members were elected: Dr. Frank M. Tiffany, Stamford; Dr. Jean Dumortier, South Norwalk; Dr. Clarence H. Scoville, New Canaan; Dr. Wm. J. A. O'Hara, Bridgeport; Dr. David M. Trecartin, Bridgeport; Dr. Daniel A. Hanrahan, Stamford; Dr. G. Stanley Heft, Bridgeport.

At 1:30 P. M. there was an intermission during which an elaborate collation was served in the dining hall.

The subject for the day's discussion was tuberculosis, and this was very comprehensively reviewed in the following papers: "History of Tuberculosis to the Time of Koch," Dr. N. E. Wordin; "Discovery of the Tubercle Bacilli by Koch, and a Study of Tuberculosis," Dr. C. R. Haxamer; "A Study of the Contagiousness of Tuberculosis," Wm. B. Coggswell; "The Pathology of Acute and Chronic Pulmonary Tuberculosis," Dr. F. C. Graves; "The Pathology of Tubercular Bone and Joint Diseases," Dr. B. W. White; "The Sources of Infection of the Tubercle Bacilli Heredity," Dr. F. M. Tukey; "The Bacteriology of Tuberculosis," Dr. Chas. F. Craig; "The Theories of Immunity, Phagocytosis, Autoinfection," Dr. F. M. Tiffany; "Climatological Treatment of Tuberculosis," Dr. G. S. Ford; "Treatment by Medical Substances," Dr. F. L. Day; "Surgical Treatment of Tuberculous Diseases," Dr. J. R. Topping; "Prognosis in Tuberculosis," Dr. J. C. Lynch; "Early Diagnosis of Tuberculosis," Dr. C. N. Harkell. All the papers showed careful preparation and an up-to-date knowledge of the subject involved. It was said by those present that the meeting was the best attended and most generally successful of any in the history of the association.

## CORRESPONDENCE.

#### THE HISTORY OF ARYAN MEDICAL SCIENCE.

The mysterious lore of the immemorial East possesses an inexhaustible fascination for Western minds, when served up as a piquant ingredient in traveller's tales, or other works of fiction. It has the charm of the marvellous and unknown. as knowledge it is not taken seriously, except by a few scholars, and, perhaps, those curious persons who deal with Theosophy and kindred absurdities. Apart from the difficulties of language, we do not understand the Eastern point of view, and very few, it is to be feared, think it worth while to try and do That is one of the reasons why our modern science penetrates so very slowly into the older Oriental civilizations. have no common ground to meet upon. A juster appreciation of their value upon our part, a fuller recognition of the fact that, if we have much to teach, we also have something to learn, would lead to a better mutual understanding and a livelier interchange of ideas. It is for such a recognition that the Thakore Sahib of Gondal pleads, in an interesting volume on the History of Aryan Medical Science. The appearance of this book from the pen of an Indian Prince of ancient descent is in itself a remarkable proof that Orientals are by no means inaccessible to the intellectual progress of the time; and the Prince has a right to be heard when he asks that Hindu Science be given its due, because he understands very well what he is talking about. is a doctor of medicine and a Fellow of the Royal College of Physicians in Edinburg, besides holding various honorary university degrees. He thoroughly comprehends the Western point of view, therefore, and his exposition of the traditional learning of his own country possesses a special value beyond that attaching to studies on the same subject by English students. brings out very clearly the fundamental distinction between that which we call science, and knowledge as it is understood in the East. The former is all observation and reasoning, none of it is sacred from attack and the newest is the best. is all authority and tradition; it is sacred and valuable by virtue of its antiquity. In other words it is part of religion. That, indeed, is essential to its acceptance. "The Indians trace all knowledge under the sun from the Supreme High, who is the fountain head of learning, the source from which all knowledge The Veda is supposed to be his revealed knowledge."

And the science of medicine, like the rest, forms part of the It is called the Avur Veda, or the "Science of Life." This takes us uncommonly far back, for the Avur Veda was composed by Brahma in the nebulous past, long before the dawn European physicians, saturated with the exact of history. knowledge revealed by the microscope and other still more modern instruments of precision, can hardly be expected not to smile at a system admittedly rooted in mythology. But, nevertheless, they will find in the very earliest Indian dissertations qualities calculated to inspire respect for the intellectual acumen of those who composed them. From the first they show two of the essential attributes of real science as we understand it—the faculty of observation, and the habit of systematical classification. Avur Veda divides its subject matter into eight sections, to wit, surgery, affections of the head, constitutional diseases, nervous disorders, diseases of children, antidotes for poisons, personal hygiene, and the preservation of vigor. That is a remarkably enlightened list of headings for a prehistoric medical treatise. It embraces pretty nearly the whole field, and is as shrewd as it is comprehensive. The most famous writers of later periods founded their works upon it. Among these, the greatest authorities are Charaka on Medicine, and Lushrata on Surgery. date of their writings is unknown; but it was certainly several centuries before the Christian era. Sir Bhagvat Sinh Jee claims that India is the mother of Western medical science through the ancient Greeks and the Arabians; and, so far as antiquity goes, he has no difficulty in making out a case. But the very completeness of the Indian system seems to furnish an argument Neither the Greeks nor the Arabians could have against it. studied the science thoroughly, or they must have been far more scientific and accomplished than they were. The Indians possessed a much more complete pharmacopæia, and they were acquainted with the chief methods of ascertaining the condition of the interior of the body which are the mainstay of the physicians to this day. They practiced the arts of percussion and auscultation; "put out your tongue" was part of the regular routine two thousand years ago, as was the examination of the eye, the skin, the pulse, and so on. Their views about the pulse and its significance were particularly sagacious, and quite in accordance with modern teaching. For instance the pulse indicating delirium is likened to the running of a partridge, and one that is almost imperceptible, irregular and languid, is considered . a sign of approaching death.

Galen, who wrote with penetration on the pulse, may possibly have derived his knowledge from Indian sources. But it appears that the ancient Aryan authorities were also acquainted with the circulation of the blood. The actual phrase is used by several Their anatomy and physiology were not quite accurate, and they mixed up the blood with the lymph to some extent; but of the fluid called rasa "it is distinctly stated that from the heart it is propelled to circulate through the arteries and veins, as water conveyed through the canal irrigates the fields." prising as are these anticipations of European science, they are more than matched by the evidences of surgical proficiency recorded of the ancient Indian practitioners. Cranial and abdominal surgery—those latter-day triumphs—seem clearly to have been practiced, along with the use of anæsthetics, and even of a rudimentary sort of antiseptics.

It is related of King Bhoja, of Dhar, who lived about the year 977 A.D., that he was operated on for severe pains in the After being rendered insensible by the administration of a drug, he was trephined, the cause of the trouble removed from the brain, and the wound closed up. On regaining consciousness he was found to be completely relieved. operations are recorded of Jivaka, who was Buddha's body physi-Vaccination for small-pox, hydro-therapeutics, dietetics, climatology, massage, hypnotism, and certain modern theories in gynecology were all known to Indian physicians centuries before they found their way into Europe. Sanitation does not seem to have been understood, but great attention was paid to the preservation of health by personal hygiene. physical exercise, and moderation are strictly enjoined. Every Hindu is required to bathe at least once a day, and to take regular exercise, which is held to increase activity and strength, and to promote digestion. Over exertion is deprecated and doubtless the modern Hindu pays great respect to that particular ordinance. "Some of them," says Sir Bhagvat Sinh Jee, "set aside a portion of their daily worship for making salutations to the sun by prostrations. This method affords them so much muscular activity that it takes, to some extent, the place of physical exercise."

Indian hygiene and the principles of medicine generally are, owing to their religious origin, mixed up with a vast amount of superstition, belief in omens, and so forth. Most of these seem to our minds very absurd, but there is one which commands as implicit credence in the enlightened west as in the benighted

East, and that is the precept that constant use of the lookingglass improves the complexion. The sage who laid it down must have been a clever man. Another superstitious practice enjoined on the Hindu, and religiously followed by ourselves, is the carrying of a walking-stick. It is frankly recommended on the ground that it "adds dignity to the individual," which is, indeed, the true raison d'être of the cane all the world over. Unfortunately for the healing art in India, the magical and religious elements have survived while the more solid and practical portions of the ancient curriculum have decayed. After the time of Buddha surgery was gradually stifled by the development of prejudices and observances connected with caste; and native medicine waned after the invasion of the Mohammedans, who brought their own system. But, from the evidence adduced, it is clear that in many respects Aryan medical science was far more advanced a couple of thousand years ago than our own in the last century; and, bearing in mind the examples of prescience given above, he must be a rash man who would assert that the ancient wisdom of Eastern sages may not yet be vindicated in many other particulars by future revelations of exact science.

A. S. IVES, WEIMAR.

#### PRECIPITATE LABOR ASSOCIATED WITH ECLAMPSIA.

The patient was a young negress, pregnant for the first time at about the seventh month. There was considerable cedema of the feet and ankles, with obstinate constipation, the bowels not moving at all without the use of laxatives, which laxatives the patient had been either too obtuse or indolent to employ at reasonably frequent intervals. There was more or less headache which was considered as dependent on the constipation. The patient was given an alkaline diuretic, warned to see that the bowels moved freely once daily, and directed to report at once if the headache and cedema did not Nothing further was heard promptly yield to treatment. with regard to this case for about five weeks, when, responding to a hasty summons, the patient was found recovering from an eclamptic seizure which had come on without prodromic symptoms of any kind. It was ascertained that the bowels had not moved in about ten days and that considerable ædema of the lower extremities had been present for two days. patient had entirely ignored the directions given her and had neglected, after the first day or so, to take the medicines prescribed. Directing the patient to pass a sample of urine as soon

as possible, the writer returned to the hospital, only a few yards distant, to order the necessary medicines; when within a couple of minutes word was brought that the woman was having a severe hæmorrhage. On hastening back the writer was saluted by the crying of a new-born infant under the bed-clothes. The woman had arisen to urinate when a single strong uterine pain had come on followed by a gush of blood. partly risen from the vessel when the child, a good-sized male, had been violently expelled, striking the foot of the attendant with considerable force. There being no hæmorrhage the cord, which was longer than usual, was tied and the child removednone the worse for its experience. The uterus contracted well and after a delay of about twenty minutes the placenta was slowly expressed. As the delivery was completed a violent eclamptic convulsion occurred, lasting several minutes. Chloral and bromides were given at once and the patient was soon under their influence. Constipation was obstinate. An ounce of magnesium sulphate, four drops of croton oil and several enemata were employed during the next few hours without result. At the end of thirty-six hours the bowels finally moved under the influence of large doses of jalap and calomel-the patient passing large quantities of hard, fæcal matter. this time a large number of convulsions had occurred but the patient had been kept so thoroughly chloralized that only a few were dangerous in their severity. Following the clearing out of the bowels the cerebral symptoms promptly abated although the ædema persisted for a number of days even under the use of diuretics. Urine was passed between the convulsions in good quantity and was of normal specific gravity, repeated examinations during this period and the week subsequent failing in every instance to show even a trace of albumen. The subsequent history was uneventful. Examination several weeks later showed both cervix and perineum free from laceration, in spite of the size of the child and the rapidity of labor-which at the outside, had not occupied more than a minute and a half to two minutes.

The case is of interest as showing the possible rapidity of labor without injury to the maternal structures, even in a primipara. The negative testimony given by the urine, combined with the prompt improvement following catharsis, is of value as showing that the eclamptic condition may possibly occur without being dependent on renal irritation but may be due to a toxemia resulting from prolonged absorption of intestinal toxines.

E. L. MUNSON, M.D., MONTANA.

#### LETTER FROM JOHNS HOPKINS.

EDITOR YALE MEDICAL JOURNAL:

Perhaps it will be of the most interest if I give a short outline of our work at the Johns Hopkins Medical School, and as an introduction it seems to me very interesting to recall what Prof. Thos. Huxley said in his address on university education, delivered at the formal opening of the University September 12, 1876. His words sound right and natural enough to us now, but when they were spoken the methods carried on in the medical schools were quite different from what they now are.

Of what he said the points I noted particularly were: (1) That only the essentials should be studied—i. e., medicine, surgery, obstetrics, therapeutics, pathology, hygiene, as well as the anatomy and physiology of the body, knowledge of medical jurisprudence, and mental diseases; leaving out zoology, comparative anatomy, botany and materia medica as non-essentials. And he adds that it is of no more value for the practitioner to know the source of a drug than to know how the steel of his scalpel was made. (2) That the examination should follow immediately upon the conclusion of the course, and not at the end of the three or four years. He says it is important, not so much to know a thing, as to have known it and known it thoroughly. (3) That there is no reason why a student should not come to the medical school prepared with as much of these several sciences as he ordinarily picks up in the course of his first year's attendance. For with a large proportion of medical students the first session is wasted in learning to learn. That every encouragement should be given to research.

It is required for entrance into the Johns Hopkins Medical School that the candidates be graduates of approved colleges or scientific schools, and can furnish evidence (1) that they have an acquaintance with Latin and a good reading knowledge of French and German; (2) that they have a knowledge of physics, chemistry and biology, such as is gained in a thorough course of a year, in which laboratory work has an important place.

As may be expected, these conditions limit the size of the classes quite considerably. The last class to enter, which is the largest so far, numbered but forty-two.

The first and second years are taken up with the study of the fundamentals; the third year with extramural teaching, and the fourth with ward work.

The work in the first year begins with histology and a short course in osteology, preparatory to the dissecting. Physiological

chemistry is taken up and finished, and physiology is begun. This course is given largely in the first year, but some lectures and all the experimental work is done in the second year. Our course in anatomy was a pleasant disappointment to most of us, for by reputation it is the driest of the dry. But here we start dissecting, after three weeks of osteology, without having had any lectures or directions, other than the rules for the first inci-We just find things and then learn what they are. of course makes the work slow, but it is exceedingly interesting. The professor and several assistants are always near at hand to advise and direct, as far as possible, that nothing be cut, so that all relations are kept till the whole part is dissected and the student has been quizzed by one of the instructors. muscles can be cut off to study origin, insertions and deep anastomosis, etc. And if the student has kept the part well wrapped in damp cloths it will be as fresh at the end as at the start. Just to show how well the bodies are prepared and preserved, they had been in the ice-box for two years before being put on the table. We were over two months dissecting our part, and after finishing they were put back in the ice-box without cutting off the muscles, which were to be studied later. Two weeks ago it was brought up, and found to be as fresh as could be imagined. The arterial injection was as bright as at first, while the rest of the tissues were the same color as when first exposed seventeen months before.

In the second year we take up and finish bacteriology, pathology, hygienic chemistry, toxicology and one part of pharmacology, these last two being mostly experimental. We also begin attending autopsies, as we are not supposed to know enough in the first year to appreciate them.

During the third year pharmacology is finished. Obstetrics, physical diagnosis and clinical work in surgery and medicine under Drs. Halsted and Osler take up the mornings, clinical microscopy and surgical pathology, with occasional special lectures, the afternoons.

The course in clinical microscopy is particularly interesting, now that examination of the blood counts for so much in diagnosis. And there is no danger of any of the students having to say, as a graduate of one of the largest medical schools said the other day, that he had not seen a white blood corpuscle till after he had graduated.

In the fourth year the students go into the wards as surgical dressers, clinical clerks, etc., also working in the different de-

partments in the dispensary. The men are called on in rotation to attend obstetrical cases in the out-patient department as well as cases in the hospital wards. Then, of course, there are clinics every day in one subject or another. Altogether there is a great deal of practical work done before graduation.

During the third and fourth years the men are frequently called on for five-minute papers on special subjects, the best of them being published in the Hospital *Bulletin*.

Right through the course we have the greatest liberty imaginable in regard to our work. The laboratories are open all the time for any special work, and the instructors are anxious to assist in the working out of any problem in which we are interested, so there are always several students doing special research. We are allowed to use, in the different courses, whatever books we find most to our liking, so that all the standard authors are represented, and consequently we always have a good criticism of the different theories.

The smallness of the class is also an advantage, as it removes the necessity of the hurried precision in the hours of work, and every student has an opportunity of seeing and understanding the demonstration, etc. It seems to surprise our friends to tell them that the class which finishes this June will be the first class to graduate from the Johns Hopkins Medical School. But this is just the close of the fourth year since the opening of the school to undergraduates. Opportunities for instruction were offered to graduates in medicine when the hospital was opened in 1889, and since that time regular graduate courses have been given. At present graduates are not admitted during the regular terms, but are given special courses during the months of May, June and July. In June of each year twelve students from the graduating class will be chosen as internes in the hospital, four each in the different departments of medicine, surgery and gynecology. The groups are to change every four months to another department, and the members of the gynecological groups have a month each in obstetrical work. So that each of the twelve will have had a thorough experience in all hospital work.

Yale is well represented among both faculty and students. We have twenty-two Yale graduates in the four classes, while among the faculty we have Pres. Gilman, Dr. Halsted, surgeon-in-chief, and Dr. Welch, pathologist and dean of the Medical School.

#### MEDICAL PROGRESS.

Self-Inflicted Wound of Bladder in Childbed.—(Montals. f. Geburt. u. Gynak., January, 1897). Kalnikoff reports having been called to attend a patient who, when micturating on the second day of childbed, found something projecting from vulva. Thinking it was the "after-birth," she cut into the projecting object, which proved to be a cystocele. A vesico-vaginal fistula resulted and the edges were gangrenous. A plastic operation was deemed inadvisable, but after several months of antiseptic irrigation and catheterization of bladder, the fistula healed.

TREATMENT OF TABES DORSALIS.—(Boston Med. and Surg. Journal, Sept., 1896). Following his theory of the close relationship of syphilis and tabes, Erb reports in a recently-published brochure the use of mercury and iodide in the treatment of the latter disease. He considers this treatment especially indicated in those cases which follow soon after the syphilitic infection, and in those in which syphilis is still active. He regards it of less efficacy in those cases in which a long interval has intervened between the syphilis and the onset of the tabes, and contraindicated when it has already been faithfully employed or the stomach is intolerant.

GALL-STONES AND RUPTURE OF THE GALL-BLADDER (SCHABAD). -(Centribl. f. Chir., Nov. 18, 1896.) A woman twenty-six years old suddenly became ill with symptoms of peritonitis. There was resistance in right side of abdomen, reaching from the free borders of the ribs to the symphysis, with some dulness. The anterior wall of the rectum then perforated about one finger length above the anus, was discharging fluid feces, pus and blood. Death occurred after twenty-five days. At the post-mortem, a general, non-purulent peritonitis was found, and in the posterior part of the abdominal cavity a little biliary fluid. Between the adherent intestinal coils, three gall stones, the size of walnuts, were found: the gall-bladder being perforated and very little of its walls left, but still containing two stones. Ductus choledochus free: no iaundice. This case is remarkable on account of the length of the time the patient lived after perforation. Most cases die within a few days.

PUERPERAL SEPTICEMIA.—(From the American Journal of the Medical Sciences, Jan., 1897). Walter Edmunds, M.D., of London, reports a case of puerperal septicæmia successfully treated by

anti-streptococcus serum. Labor had been difficult, chloroform and forceps had been used. The patient was admitted to the hospital seriously ill, temperature high and irregular, respiration heavy and occasional rigors. The left leg was badly swollen and The patient was treated daily with hypodermic injections of streptococcus antitoxin in 4 c.cm. doses for six days. The treatment was found to be very irritating to the parts to which it was applied, in some cases causing a small abscess though the serum was perfectly sterile. However, the woman improved rapidly under the treatment, each injection reducing the pyrexia and giving her new strength. Two small abscesses were opened on the left leg, one at the ankle and one at the knee. The latter under the microscope showed typical strings of streptococci which, however, refused to grow in gelatin tubes, showing a very low vitality. The antitoxin treatment was kept up at long intervals for four months, when the woman was practically well. This case seems to be a fair test of the efficacy of the serum treatment, as the fact of the streptococcus infection cannot be disputed and no other treatment was at any time resorted to after admission to the hospital. Dr. Edmunds adds that in his opinion the anti-toxin saved the woman's life.

ABSCESS OF OVARY.—(American Journal of Medical Sciences). Dr. Z. H. Etheridge reports three cases of abscess of ovary due to pneumococcus. So far as could be ascertained no case of ovarian abscess produced by this microbe has been reported previously. "The majority of abscesses of the ovary are the work of the staphylococcus. A few ovarian abscesses contain the colon bacillus."

A METHOD OF DISINFECTING THE BLOOD IN SERIOUS INFECTIOUS DISEASES.—(Medical Press). In the treatment of those infectious diseases in which general intoxication is as much to be feared as local lesions, Barre recommends a process styled by him the "disintoxication of the blood." The operation consists of simultaneously performing phlebotomy and injecting an artificial serum. It is so conducted that, while the blood is being withdrawn from one arm, an equal amount of the serum is injected at the same rate into a vein of the other arm. The quantity of serum thus injected varies; for an adult, from fifty grams to one liter, according to the conditions prevailing. By this method of treatment, while the arterial pressure is not changed, much of the toxins present in the blood is eliminated and, at the same time, the bactericidal power of the blood is increased by the serum

injected. The secretion of the urine becomes normal. Barré has employed this method in three cases, after all other treatment had failed, and in every instance the most serious symptoms rapidly abated, and a restful sleep followed soon after the operation. On waking, considerable urine was passed and slight sweating occurred. The patient started on the road to recovery. This treatment is only recommended when other methods have failed, but Barré believes remarkable results may be obtained from it.

THE TREATMENT OF PERITONEAL TUBERCULOSIS.—An article in the Journal des Praticiens of September 15, 1896, cites three cases which were successfully treated for peritoneal tuberculosis without calling in the aid of the surgeon. A child, aged eleven, with a marked history of tuberculosis, showed many symptoms of tubercular infection. Pain in the abdomen and loss of appetite were complained of, while for several months the bronchial glands had been enlarged. Upon examination the abdomen was found to be distended, painful and resistant to palpation, and signs of pleurisy were apparent at the left base. Ichthyol was applied to the abdomen, and the diet regulated, liquids being chiefly given. Later rectal injections of creosote, seven drops in five drachms of an emulsion of cod-liver oil, were administered. The amount of creosote was gradually increased during the next two months, until the dose reached twenty-two minims. Under this treatment the abdomen was much diminished in size and the resistance to palpation greatly reduced. At the end of four months the child was discharged, enjoying a good appetite and no longer complaining of pain. The lungs were normal and the whole system in a much improved condition. Reports from the child a year later stated that it was absolutely free from any tubercular infection. The other cases were very similar and were treated with equally gratifying results. Thus, proper hygiene, diet, and tonics, aided by counter-irritations over the abdomen and enemas of creosote, may suffice to completely cure peritoneal tuberculosis in young subjects. Often, however, the opening of the abdominal cavity to draw off the liquids may be necessary or other surgical treatment justifiable and advantageous.

REPORT OF THE ACTION OF DRUGS ON THE LEUCOCYTES OF THE BLOOD.—(British Medical Journal, Sept. 26, 1896). The numerous reports that the leucocytes of the blood were greatly affected by the introduction into the circulation of various substances such as peptones, bacterial products, etc., prompted Wil-

kinson to make a series of experiments. Injections of atropine were given every twenty-four hours for several days. Immediately after the injection, the number of leucocytes per cubic millimeter was diminished, but this was soon followed by a rapid increase, which condition prevailed until the next injection, when a marked decrease in the number present was again noticed, this in turn to be followed by a subsequent rise. other change noticed, coincident with the diminution in number, was that the proportion of mononuclear to the polynuclear leucocytes increased, the latter to predominate again when the total number of white blood corpuscles was above the normal. The red-blood corpuscles showed no change whatever. Very similar results were obtained from pilocarpine, digitalin, carbolic acid, potassium iodide, and several other drugs which were employed in the experiments. The injection of quinine hydrochlorate, salicine, or sodium salicylate also produced a change in the number of leucocytes, but the variation was not so marked. A large dose of quinine hydrochlorate, however, produced a great diminution of the white blood corpuscles, without the subsequent increase, and death followed within two days. changes in the number and relative proportions of the several varieties of the leucocytes, are similar to those reported as following injections of bacteria, etc. Analogous variations in the blood of dogs and cats have been described, as the results of acute local inflammations.

TUBERCULOSIS IN INFANCY AND EARLY CHILDHOOD, WITH SPECIAL REFERENCE TO THE MODE OF INFECTION. —(Medical News, Vol. LXIX., No. 24). While tuberculosis in infancy is rarely met with in private practice, Holt ranks it among the common infectious diseases affecting children in institutions and Intra-uterine infection is rare, even though the mother be a tuberculous patient during pregnancy. In sixtythree per cent of the cases examined the autopsies showed no tubercular lesions of the alimentary tract whatsoever, and in not a single instance did the stomach or intestine seem to be the seat of the primary lesion. Holt states that tuberculous meats and milk are seldom met with, and that the danger of infection from this source is reduced to a minimum by the fact that the tubercle bacillus in small numbers may be taken into the stomach almost with impunity, being discharged in the fæces without infecting the intestines. The explanation given of the rare occurrence of lesions in the alimentary tract is that the primary infection almost always occurs through the respiratory organs, and in children the disease is fatal before sufficient time has elapsed for the abdominal viscera to become infected secondarily. The lungs were diseased in ninety-nine per cent of the cases, and the bronchial lymph nodes in ninety-six per cent, the latter, probably, being the seat of the primary lesion in the majority of cases. The writer concludes by stating that he does not wish to detract from the importance of the examination of meat and milk for tubercular infection, but believes that greater precautions should be taken against tuberculous patients being in the presence of children.

DRUGS NEGLECTED.—(Scientific American). The President of the American Pharmaceutical Association, Mr. Patch, made an analysis of 27,000 prescriptions recently, the result of which proves that physicians neglect the pharmacopæia. While but seventeen vegetable drugs were prescribed more than one hundred drugs of vegetable origin were omitted. Only ten metals were utilized. The study of 217,000 prescriptions from nineteen drug stores in twelve of the principal cities of the United States shows that 11.25 per cent were proprietary articles, not including tablets, pills, elixirs and fluid extracts which were of specified manufacture.

The Konig-Maas Method of Restoring Persons Apparently dead from Chloroform.—(Birm. Med. Rev.). Green says that the following method will accomplish the above. Stand on the left side of patient, facing him; place the ball of the thumb of the opened right hand upon the patient's chest, at a point mid-way between the apex beat and the sternum. Press in the thoracic wall with a quick, strong movement, at a rate of 30 to 120 to the minute. The efficacy of the Konig-Maas method lies in its direct action upon the heart, restoring the circulation and also the respiration. A distinct pulse wave may be seen in the carotid arteries of the fresh cadaver, if the precordium is quickly and forcibly compressed.

ON THE TREATMENT OF ANEMIAS.—(By Wm. Krauss, M.D., Memphis Med. Monthly, March, 1897). The evolution of organic iron compounds has been interesting both from pharmaceutical and clinical standpoints. The scale salts were the first to attract attention, and their superiority over the inorganic preparations soon became manifest. The dehydrated succinate then came into favor, and later the "albuminates" were introduced—

indefinite mixtures, whose solutions readily coagulated, even spontaneously. Theoretically it would seem that iron could only be of service in chlorosis; clinically this rule does not hold good. I have used pepto-mangan "Gude" some five years with good results, and beg leave to report the following cases:

Case 1. Mrs. C., aged 31, hemorrhage following an abortion at fifth month. Hemorrhage was stopped by curetting. She rallied nicely; no transfusion. Next morning found her very weak; no blood examination permitted. Was put upon peptomangan "Gude", tablespoonful three times a day, milk and beef tea. At the end of a month the blood count was 4,800,000; hemoglobin seventy per cent. Although she felt entirely well, pepto-mangan was continued. At end of third month she menstruated as usual.

Case 2. Mrs. K., aged 29, had had a miscarriage two months before, but had lost very little blood. There had been no fever, but patient was steadily losing ground. Blood count 3,200,000; hemoglobin not estimated. She received the same nourishing diet as before and pepto-mangan "Gude". At end of five weeks (June 3, 1892) her blood contained 4,300,000 red cells to the cubic millimeter (had no hemometer at the time). She was able to be up, had a fair appetite and was gaining daily. She went North on a trip, and no subsequent count could be made, but looked better than for a year past on her return.

Case 3. Mrs. L., aged 50; "nervous break down"; had been treated unsuccessfully for two years; had also had morphin habit. Red disks, 2,800,000; hemoglobin forty per cent. Treatment: Pepto-mangan "Gude" (tablespoonful three times a day), strychnin hypodermically, phosphide zinc (one-fourth grain t. i. d.). After seven weeks she was able to take short walks, and had gained eighteen pounds.

Case 4. Aged 35, male. Was treated at my sanitarium for opium habit, but owing to business pressure had to leave for home before fully recovered. He returned in three weeks to be "built up." Had hot and cold flashes, insomnia, was very nervous. Red cells 2,320,000, some microcytes and platelets; hemoglobin 45 per cent. Took pepto-mangan but had to go home in two weeks, continuing the treatment. Four weeks later he wrote: "Am feeling better than for years; have gained flesh steadily since I left." (I am sorry not to have been able to examine his blood again).

Case 5. Miss R., aged 19. Chlorosis. Red cells 4,160,000, hemoglobin 40 per cent. Pepto-mangan seven and a half weeks.

Result: Red cells 4,720,000, hemoglobin 90 per cent; great subjective improvement.

I have given pepto-mangan "Gude" to other patients with benefit but have no record of blood examinations. Among these were one case of chronic gastritis with hypochlorhydria complicating malaria; one of hysteria (male, æt. 19), three cases convalescent from opium treatment, two of senile debility, two of chronic nephritis, and one of tuberculosis.

#### ITEMS OF INTEREST.

At a recent meeting, a special committee of the Allegheny Medical Society favored gas for condemned criminals instead of hanging, and suggested that a bill to this effect be presented to the Pennsylvania Legislature.

A Burlington, Vt., doctor is suing a druggist who refused to fill one of his prescriptions on the ground that it called for a dangerous preparation. This delay of the druggist lost the patient to the doctor and he accordingly asks for \$3000 damages.

Law makers in this and other countries have recently framed some laws which are a trifle interesting to medical men, if for no other reason than their diversity. For instance: Buffalo, N. Y., has passed an ordinance making it "unlawful for any person or persons to use or engage in the sale of any bottle, mechanism, or other device, for the artificial feeding or nursing of infants or children under three years of age, that has connected therewith a rubber tube, hose or such contrivance." In the State Legislature of New York is being discussed a "bill," in which it is proposed to treat tuberculosis the same as any other infectious disease—by isolation in special hospitals to be erected by the State and to be used solely for such cases. Strange to say it is the medical men who are making the most objection to the passage of this "bill," notwithstanding that competent authorities estimate that there are 20,000 cases of this disease in New York city alone. objections are being made principally in behalf of wealthy patients who are so afflicted. Many cities in the west have passed ordinances in which spitting on the sidewalks, in public halls, buildings, etc., is punishable by a fine. The House of Commons, England, has recently enacted a law which places a heavy fine on any vender or dealer in oysters, who neglects to placard the same, telling from where they were brought and when they arrived. Finally, the Germans have recently enacted a law which holds the advertiser, as well as the newspaper publishing the same, responsible for the assertions made therein. If a promise to cure is made and the remedy fails, prosecution is liable.

Dr. Brandes of Halle, claims that the Roentgen rays should be visible to an eye from which the lens has been removed, as in the treatment of cataract. He has found a girl who can see the light with her left eye from which the lens has been removed, while with the right eye, which is normal, she sees nothing. He asserts that the rays affect the retina, and that the light can be seen by normal eyes, if the head be enclosed in an opaque vessel near the source of the rays.

The British Medical Journal advocates the following method of determining whether life is extinct: Light a wax taper and apply flame close to skin until a blister forms. If it contains serum, the person is still living; if on the contrary it contains only gas, it will burst with a small explosion and person is dead.

The Paris Court of Appeals recently decided that the fact of marrying before being cured of a venereal disease, and knowingly communicating it to the other party of the contract, is sufficient cause alone to allow a divorce.

Dr. Siebert of New York is an advocate of filtering milk through cotton. He finds that the oil globules pass through the cotton and that three-fourths of the germs are eliminated by this process. This, he says, is as available as sterilizing and has none of its objectionable features.

THE PHYSICAL DEGENERACY OF THE TURKS.—There is a notion among the Europeans that the Turks are a fine, strong race, full of physical vitality and courage. This is a grave mistake. Prof. Von During, charged with a special mission by the Sultan, made careful investigations in the great provinces of the country, where he found that the Mohammedan population was frightfully affected by syphilis. According to this specialist, thirty out of a hundred of the children going to the Moslem schools have inherited the disease, and only ten out of a hundred of the new-born attain the age of twelve years. a fearful mortality. The disease is general among all Mohamme-This degeneration explains why the number of recruits, 85,000 in 1885, is less than 55,000 to-day, and is tending to diminish every year. It shows also the reason why the last mobilization took so much time and only half of the number demanded came out. It is feared that the Turkish race is in danger of extermination in a not very remote future.

#### ALUMNI AND SCHOOL NOTES.

- 1853. Francis Bacon, M.D., has been appointed by Governor Cooke a member of the Connecticut Board of Pardons.
- 1879. A. Winslow Leighton, M.D., and wife, were passengers on the North German Lloyd steamer that sailed on April 10th for Gibralter. They are expected to return in October.
- 1880. Jay W. Seaver, M.D., recently delivered a course of lectures on Anthropometry before the members of the Posse Gymnasium of Boston.
- 1891. Frederick O. Chamberlin, M.D., has removed his office to No. 36 bis Avenue de l'Opera (Equitable Building), Paris, France.
- 1895. Elmer A. Lawbaugh, M.D., has located at 711 Marshall Field Building, Chicago. His specialty is eye and ear.
- 1895. Vertner Kenerson, M.D., now located at 189 Allen street, Buffalo, N. Y., has been appointed Clinical Instructor in General Surgery to the Buffalo University Medical Department. Dr. Kenerson has also been appointed Assistant Surgeon with rank of Captain, to the Seventy-fourth Regiment, located at Buffalo.
- 1897. E. D. Chipman has been appointed House Physician, dating from May 1st, at the Springfield City Hospital, Springfield, Mass.
- 1897. B. F. Corwin has an appointment from July 1st at Charity Hospital, New York City.
- 1897. R. S. Graves has the first appointment at St. John's Hospital, Brooklyn, N. Y.
- 1897. J. A. Lee has the first appointment at St. Mary's Hospital, Brooklyn, N. Y.
- 1897. A. E. Loveland has an appointment from July 15th at Passaic City Hospital, Passaic, New Jersey.
- 1897. F. H. Reilly has the first appointment at St. Joseph's Hospital, Paterson, New Jersey.
- 1897. F. H. Todd has the first appointment at the Paterson General Hospital, Paterson, New Jersey.

- 1897. H. L. Welch has an appointment from July 1st at Charity Hospital, New York City.
- 1898. E. E. O'Donnell won second place in the shot-putting contest at Yale's Spring games on April 28th. He will be one of Yale's representatives in this contest in the dual games with Harvard on May 15th.
- 1898. H. G. Watson has an illustrated article in a recent number of Leslie's Weekly, and also in the Illustrated American of April 17th, on "Strength Tests of Yale's Strong Men."
- 1898. Julius H. Hurst was recently called to Australia on urgent business and will not return until September.
- 1898. William R. Munger and Clifford A. Brainard have withdrawn from school. Both expect to return in the Fall.
- 1900. Hamlin is playing second base for the University baseball team, and Dunleavy is pitching for the Freshman nine.

The Annual Address in Medicine, at Commencement, will this year be delivered by Prof. William M. Polk, M.D., of New York City.

The Senior Class Book, edited by L. H. Stewart, will be out the latter part of May. It will be about the size and shape of the "Yale Banner." Every phase of the school life will receive its share of attention in articles written by members of the Senior Class. There will be over a hundred appropriate engravings and illustrations. It is to be published by the O. A. Dorman Co.

# YALE MEDICAL JOURNAL

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## THE CONNECTICUT MEDICAL SOCIETY.

PART I.

By N. E. WORDIN, A.M., M.D., BRIDGEPORT.

The Connecticut Medical Society celebrated its one hundredth anniversary on the 25th, 26th and 27th of May, 1892. place of assembling was the beautiful Dwight Hall, the building of the Y. M. C. A. upon the University grounds, New Haven. On the afternoon of the first day the Society was entertained with a ride in carriages up the west and down the east side of East Rock, all of which has been laid out into a spacious city Upon any clear day the ride is a delightful one. From the summit, nearly four hundred feet, the city with its varied active industries, lies before you. At your feet like a thread winds the Quinnipiac, which, spreading out to form the harbor, broadens into Long Island Sound, dotted with sails of merchandise and of pleasure. To the west stands the companion cliff, West Rock, where hid the regicides. Judges' Cave is a reminder of king-craft, from which the settlers sought and found deliverance.

The centennial meeting of this organization was in as great contrast with its beginning as is the State and its municipalities now and one hundred years ago. At that time there were but two cities in the land as large as New Haven is now; the college contained one hundred and twenty-five students, and a half century passed before George Williams founded the first Young Men's Christian Association.

The first meeting of the Society was held in Middletown "agreeably to charter," on the second Tuesday of October, 1792. There were 'present five Fellows from each county, excepting that Middlesex and Tolland had three each. Leaveritt Hub-

bard was chosen President; Eneas Munson Vice-President, John Osbourn Treasurer, and Jared Potter Secretary. The record book now lies before me, as distinct and clear as if graven with burin upon steel. A committee was appointed to prepare bylaws; the County Clerks were directed to report the names of members, to collect the tax of three shillings, and after making other arrangements, the session adjourned to meet at the house of David Bull on the Wednesday next after the second Thursday in May next, at ten o'clock A. M.

The by-laws which were adopted are so indicative of the character of the men and of their purpose in forming the Society, that I may be pardoned for copying the doings of the second day—Thursday—of that second meeting at the house of David Bull, innholder:

"At a Convention of the medical Society holden by adjournment at Hartford on the 15th Day of may 1793—

"Be it ordained that the Secretary of the Connecticut Medical Society shall record all the transactions of the Convention, and conduct their correspondence & have the custody of the Seal of the Society.

"Be it ordained that the Treasurer shall keep the monies of the Society subject to their orders, and shall annually render an account to the Convention of all monies received and paid by him.

"Be it ordained that an auditor of accounts shall be annually appointed who shall examine all claims upon the Society & if allowed, shall draw orders on the treasurer for the amount, and no money shall be paid on any account without such orders. And said Auditor shall annually lay before the convention the several accounts so examined and allowed, with the amount of the orders he shall draw upon the treasurer.

"Be it ordained, that it shall be the duty of the examining committees in the several counties to make an annual return to the Secretary of the Society, of the several persons by them licensed & the date of their license & an entry shall be made in the records of the Society of every license granted, containing the name of the person licensed, of the President & examining committee signing the same.

"Be it ordained that all communications from members of this State, shall be made to the clerks of the county meetings, and by them shall be laid before such meetings for examination, and if approved by the county meetings shall be transmitted to the Secretary of the Society to be laid before the Convention. "Be it ordained, that it shall be highly disreputable for any member to assume or hold the knowledge of any Nostrum, or palm any medicine, or composition on the people as a secret, and that any such member shall be deemed unworthy to belong to the medical Society; And that the members of the Society shall hold no medical correspondence with such characters, nor consult with them in any medical case whatever; And that all pretenders to Nostrums shall be deemed and considered proper subjects for expulsion from this Society.

"Resolved, that the Secretary be directed to procure a publication in the several newspapers of the State the bye-laws of the Connecticut Medical Society.

"Voted that a tax of three shillings be laid on each member of the Connecticut medical Society and collected on or before the fourth Tuesday of September next by the clerks of the respective county conventions to which they belong and said clerks shall be responsible to the Treasurer for the same.

"Voted, that the President & Fellows of the Connecticut medical Society, shall receive six shillings per day, for each member while attending in medical convention, and sixpence per mile while traveling from their several places of abode to the convention.

"Voted, that no member speak more than twice in any debate, unless to explain himself, wherein he has not been properly understood.

"Voted, that the Society transmit an answer to the letter received from the faculty of medicine of Columbia College, New York, by their Secretary.

"Voted, that the thanks of the Fellows of the Connecticut medical Society be returned by the Vice-President to the President of the Society for his elegant oration delivered at the opening of the present convention, & that a copy be requested of him to remain on the files of the Society.

"Voted, that the next convention of the Connecticut medical Society, shall be at the city of N. Haven on Wednesday the 16th of Oct. next at the house of John Smith, inholder, at 10 o'clock A. M."

"JARED POTTER, Secretary."

They had secured their charter after prolonged effort. The story has been delightfully told by Dr. Francis Bacon in his Centennial Address. Doctors Bronson of New Haven; Ashbel Woodward of Franklin; George Sumner and E. K. Hunt of

Hartford; Rufus Blakeman of Fairfield, have each made valuable contributions, so that my task is mostly that of a compiler and I shall borrow as needed, from these, the real historians.

The eleven physicians who petitioned the General Assembly of the Colony of Connecticut continued their organization and are the oldest medical society in the country. They are perpetuated in the New London County Medical Association. It was in 1763—before any army surgeons could form the nucleus of an organization, and long before the Colony became a State. And yet three of the subscribers to the memorial, Theophilus Rogers and Philip Turner of Norwich, and John Downer of Preston, lived to see the Connecticut Medical Society incorporated and to take part in its deliberations. The original petition may be seen in the archives of the State Library and is as follows:

"To the Honorable General Assembly of the Colony of Connecticut to be held at New Haven the Second Thursday of October next:

"The memorial of us, the Subscribers, Physicians in said Colony Humbly showeth, That Whereas, Life is the most Desirable of all Sublunary Enjoyments and Health so Invaluable a Blessing that without it in some Degree Life is Little Worth And that the Promoting Medical Knowledge among Physicians is the Necessary and direct means to Restore health and even Preserve Life and is of great Importance as it will Render The Practice of Physic more safe and Serviceable to the Patient And at the same time yield more Satisfaction and Honour to the Profession:

"And Whereas, more than one hundred years have already passed away since the Planting this Colony and Nothing has been Publickly done to Distinguish between the Honest and Ingenious Physician and the Quack or Emperical Pretender by reason of which Imposture and Imposition has been and still is but too Commonly Practiced among us to the great Injury of the People as well as the Disparigment of the Profession We your Honours' Memorialists would therefore humbly pray your Honours to Take the Matter under your wise consideration and Order Enact that the Physicians in each County in this Colony for their Mutual Edification and Instruction have Liberty and power to meet Together in their Respective County's at such time and Place as they shall Appoint once in three months and at the first of such their Meetings choose a Committee of three

or More approved Physicians to continue for the Space of one year and Annually to be chosen such Committee for the time Being to have full power to Examine and if found duly Qualified Approve such candidates for the Practice of Physic who shall offer themselves for Examination, and if any Person offering himself shall be Adjudged not qualified and so not Approved by such Committee that such Person may apply himself to any Quarterly meeting in the same County and be there Examined and Determined by such meeting and Approved if they think Fit by Proper Certificate and that for the future no Person or Persons that are not Already deemed Physicans who shall pretend to Practice Physic without such Approbation first had And Obtained Appearing by Proper Certificate be Allowed to Bring or Maintain any Action against any Person or Persons To Recover any Debt Demand or any other thing for any service he or they shall Pretend to have done or Presumed as a Physician-Or otherwise Enact and order some proper regulation for the Practice of Physic as in your Wisdom shall be thought most Proper And as in Duty bound Shall ever Pray.

"Dated at Norwich the 27th day of Sept., 1763."

The document was as original in its way as the Constitution of Connecticut, adopted more than a hundred years before. There was not in the land an incorporated medical society, nor an organized medical school, nor any authority to confer a medical degree. The step was far in advance of its time. The same spirit moved the physicians of the western part of the State. Two years later, in 1765, Litchfield County effected a medical organization although, so far as I know, its record is not available. The New Haven County Society dates its beginning from 1783.

Whether it was owing to their proximity to the meetings of the Assembly, whether they were more persistent, whether their clientage was of that body or whether the time was more opportune, certain it is that they were very influential in securing the long-desired charter.

In the Connecticut Journal of December 10, 1783, appeared a notice signed by five prominent physicians, requesting the physicians and surgeons of New Haven County to meet at the coffee-house in New Haven, on the first Monday of January next ensuing, at 2 P. M., "in order to form regulations within the line of their profession, of the utmost importance to the public and themselves." This was the beginning of the New Haven County Medical Association. They went to work vigorously.

Circulars were sent to physicians throughout the State, meetings of delegates were held in Hartford and New Haven when the Legislature assembled, memorials were frequently presented which as often failed, either by absolute refusal of the Legislators or by disagreement between the two branches of the State Government. They sought "legal sanction to examine candidates for practice and to issue valid certificates of qualifications. They held up as examples other well-ordered governments which had encouraged an accurate study in the theory and practice of physic and surgery by favoring the establishment of medical societies." They call to notice the many important and useful discoveries in Anatomy, Chemistry and Botany, and the many accurate histories and cures of diseases, which never would have been explained, methodized and publicly authenticated, unless societies had been so established for the preservation and diffusion of mutual improvement. The movement attracted the people of the State. The college partook of the excitement and on the 15th of July, 1788, the Seniors discussed the question, "Whether it be safe to grant the proposed charter of the Connecticut Medical Society?" and on the 6th of January following, the question, "Whether the institution of Medical Societies be useful?"

The opposition urged against the granting of the charter was that "the main purpose of it was to increase the pecuniary emolument of the faculty; besides, it was not customary to make laws for the benefit of particular classes." There was apprehension that danger might come from special privileges and monopoly. How well we remember that after more than a hundred years the same objections were urged against the Medical Practice Act, which was adopted after long preparation and much hard labor, in 1893. The charter was granted in 1792. It must have been pleasing to its promoters. The resolution by which it was introduced reads:

"Whereas, well-regulated medical societies have been found to contribute to the diffusion of true science, and particularly the knowledge of the healing art; Therefore, Be it enacted by the Governors and Council and House of Representatives in General Court Assembled, that there be a Medical Society formed within this State," etc.

The working of the organization was practically the same as now; County meetings at which Fellows shall be elected, three from Middlesex and Tolland, five from the others, to examine the license candidates, to confer honorary degrees, to hold prop-

erty not to exceed sixteen thousand six hundred and sixty-seven dollars, to communicate useful information to each other and to publish such extraordinary cases and observations as they may deem proper. Accordingly, organizations were immediately formed in counties where they had not previously existed, and thus have they continued. The county association is the unit in the Medical Society, just as the town is in the Government of the State.

If we take pride in our little State, whose emblem is the three transplanted vines, this study of its early medical organization is source of gratification and of patriotic pride. These men were, with sense, above their peers refined.

Massachusetts, New Jersey and New Hampshire, were the only States where medical societies existed. The only medical colleges were that of the University of Pennsylvania, founded in 1765; King's College, now Columbia, 1768, and Harvard, 1782.

Few physicians had degrees. Medical instruction was for the most part private. It is not strange that quackery should have been prevalent. Irregularities had crept into the church. Anne Hutchinson and her Antinomian doctrines: Roger Williams and his plea for liberty of conscience; Mary Dyer, the Quaker, who was hung upon Boston Common, had made dissensions and divisions in church and state. And so in the medical profession were those who worshipped false gods. It was an age of medical systems and theories. "All preceding history," says Baas, "is scarcely so rich in them." There was no basis for fact. Speculation, theory, were easy. It was the transition period between cutting loose from the ancient theories of the old hemisphere and the establishing of a standard either of teaching or of research for the new. There were able men who eagerly investigated and soon began to write upon the prevalent diseases. There were surgeons who had gained knowledge in the war recently ended. These became fretful, impatient and perhaps provoked at the more ignorant ones who, pretending to know. plied their trade and reaped their harvest to the injury of both patient and good practitioners, following Ben Jonson's advice:

> "Get money; still get money, boys; No matter by what means, And then let virtue follow, if she will."

All through the proceedings, up to within twenty-five years ago, occur resolutions denouncing the various innovations of Perkinism, Thomsonianism, Homeopathy and other schemes for getting money easy. They began early in the history of the

Society. In 1706, a few years only after its organization, appears this record: "Voted, It having been represented to this Society that one of their members had gleaned up from the miserable remains of animal magnetism, a practice consisting of stroking with pointed metallic instruments, the pained parts of human bodies, giving out that such strokings will radically cure the most obstinate pains to which our frame is incident, causing false reports to be propagated of the effects of such strokings, especially where they have been performed on some public occasions, and on men of distinction; also that an excursion has been made abroad and a patent obtained from under the Authority of the United States to aid such delusive quackery-that under such auspices as membership of this Society & the patient above mentioned, the delusion is progressing to the Southward, which may occasion disgrace to the Society & mischief abroad: wherefore this Society announces to the public that they consider all such practices as barefaced imposition, disgraceful to the faculty, & delusive to the ignorant; & they further order their Secretary to cite any member of this Society practising as above, before them at their next meeting to answer for his conduct, & render reasons why he should not be expelled for his disgraceful practice."

Even as late as 1851 we find the record. Dr. Cogswell made a report on the matters referred to the committee of which he was chairman, on the subject of using and vending nostrums and a more summary way of dissolving the connection between the Medical Society and those of its members who may adopt Homœopathy, Hydropathy, or any of the exclusive systems of the day. That we recommend to each County Medical Society to examine into the same of patent medicines, by members of the Society and require the enforcement of the by-law on the subject, as said practice is incompatible with honorable standing in the profession; although they were induced sometimes to wink at a violation of the law. Such a respect was there for the name of Hull that, notwithstanding the stringency of the by-laws one county society voted "that a committee be appointed to call on Doctor David Hull and inform him that by paying his taxes in arrears he will be considered an honorable member of this society, without inquiring into the secret of the composition of 'Hull's Physic.''' A committee of three of the most respectable members were accordingly appointed and Doctor Hull remained a most esteemed member of the society until his death. Whether from envy of the reputation which the nostrum

had given Dr. Hull or of the wealth which may have been gotten from the sale of "Hull's Colic Pills," true it is that there was ill-feeling between the proprietor and others of his neighborhood. As one of these, Dr. Hurlburt of Greenfield Hill, was taken with his last illness he expressed the wish for a reconciliation. A meeting was arranged. The embarrassing subject happened to be brought into the conversation. The situation became very much strained, when to relieve it Doctor Hull boldly exclaimed, "Yes, Doctor, those pills are a favorite hobby of mine"—"Which thousands have rode to death," exclaimed the dying man between his paroxysms of pain.

No name is mentioned but with such definite charges but one person could be intended. It was Elisha Perkins, who seems to have departed from the faith with less reason, because his father, Dr. Joseph Perkins, was a daring and successful surgeon, ardent in the pursuit of knowledge and a man of piety. Most of the capital operations of the surrounding country were performed by his hand. Attempting on one occasion a hazardous operation, the patient, a slave, died under the knife. Chagrined at the loss, the master charged the surgeon with having sent his victim prematurely to the devil. "It is fortunate," said Perkins, "that the only loss falls upon the owner, as the slave could not possibly suffer from an exchange of masters." More successful were they with Dr. Mark Newell who, cited to appear before the convention, did so and made affidavit to the composition of his Jaundice Pills, or family physic. In like manner Dr. Samuel H. P. Lee of New London, having lodged with the Secretary of the medical convention of the State, the recipe of Lee's patent New London Bilious Pills, subscribed under oath and having consented "that any member of the Medical Society of this State shall have the liberty of making and using in his practice the said pills, the said Lee's patent to the contrary notwithstanding; therefore, resolved, that the said Samuel H. P. Lee be considered as in regular standing in the Connecticut Medical Society." Nor did the followers of the new and taking idea of In 1857 William H. Sage of Homoeopathy escape the ban. Unionville was expelled, "under the by-law which makes it the duty of the Medical Society to expel any member notoriously in the practice of Homœopathy, Hydropathy or any other form of quackery."

[To be continued.]

### FOUR CASES OF CEREBELLUM HEMORRHAGES.

(Three cases in the service of Dr. Dana, New York).

By Robert E. PECK, M.D., NEW HAVEN.

The cerebellum is subject to the same inflammatory, degenerative and protozoal diseases, as other parts of the encephalon and experience is creating, apace, a symptomatology of hemorrhage, abscess, tumor and congenital malformations of the organ.

While the physiologists are endeavoring to interpret the functions of the cerebellum, from observation on the state of the organism after partial ablation, section of cerebellar connection, etc., clinicians are making contributions of value, to a knowledge of its function by studying closely the symptoms produced by various lesions in different parts of the cerebellum, and contrasting views.

Cerebellar apoplexy is one of the rarest forms of intercranial hemorrhage, constituting only about two per cent of all fatal cases of apoplexy. The ratio of frequency of cerebral, to cerebellar apoplexy, was given by Andral as twelve to one, and by Hellacret as thirty-five to one. A number of cases are scattered through medical literature dating from the time of Andral's important communication (Clinique Medicale de Paris, 1840).

The etiological factors that enter into the causation of rupture of cerebellar blood-vessels, are not different from those that precede apoplexy in any part of the brain. They may be summarized in a line: the causes of arterial degeneration, whether these be acute infective processes or chronic diathetic conditions.

Hemorrhage into the substance of the cerebellum manifests itself under two rather distinct symptomatic groups: A grave, abrupt, foudroyant form, in which the patient is carried quickly through deep unconsciousness to death, and the other in which the symptoms are less abrupt in onset, and completeness of development, and has distinctly cerebellar characteristics.

The clinical histories, with notes of the autopsies, of the following cases, are published as contributions to the symptomatology of cerebellar hemorrhage:

CASE I. E. T., female. Admitted to the hospital on September 11, 1877. The family history was unimportant. Several

years ago the patient had a tumor near the right temple, which was removed, and after its removal some disturbance of vision developed. There was a history of a slight attack of hemiplegia, with vertigo some years ago. Several months before coming under observation, the patient began to have trouble with the left eye and underwent an operation at the Manhattan Eye and Ear Hospital. While recovering at the hospital, the patient was taken suddenly ill in the evening, with symptoms of cholera morbus, and on the following morning was admitted to Bellevue Hospital in a semi-comatose condition. The pupils were contracted, the pulse rapid and temperature 99.8° F. The patient could be aroused and would answer questions in a low voice, but when left to herself lay quietly and did not complain of pain. Paralysis of the face was shown by a drooping of the corner of the mouth and a smoothing of the brow. The tongue was pro-The head and eyes were almost constantly truded evenly. turned toward the right side. Physical examination of the chest and abdomen was negative. On attempting to force the patient to stand, her legs gave way and she was unable to walk. morning and evening pulse was 102, temperature 98.4°, and respiration 32.

September 12th. The patient seemed better; she used hands to fan herself; still spoke in low voice. She was given egg and milk regularly and ol. ricini for bowels.

September 13th. The patient still continued in about the same condition, was rather stupid, although still continued to answer questions. The pupils, which had previously been contracted, were now dilated and did not respond to light. The conjugate deviation of head and eyes was less marked.

September 15th. The patient became restless, constantly endeavoring to throw off the bed clothing and get out of bed. The temperature became higher, the pulse more rapid, and the respiration more labored. Bromides and chloral were given to quiet the patient, which they did partially. The coma gradually deepened, however, and on the night of the 17th symptoms of cedema of the lungs developed, with embarrassed respiration, which was finally relieved by stimulants.

September 18th. The patient again developed symptoms of cedema in the morning, which were again relieved by stimulants, but returned in the afternoon, and in the evening the breathing became stertorous, and the pulse rapid and weak, when she died.

Autopsy. The cranial cavity only, was opened. The veins

and sinuses were found filled with blood and there was considerable evidence of pachymeningitis. The arteries at the base of the brain were atheromatous and calcified. On the left lobe of the cerebellum was found a dark blood clot, which occupied the lower half of the lobe and extended, for a short distance across the valley, in the region of the pyramid, and into the digastric lobe of the right side.

CASE II. E. C., age 61, female, married, born in England. Admitted to Bellevue Hospital April 26, 1878. Family and personal history could not be obtained. On admission, the patient was in a semi-comatose condition and could be aroused only by loud questioning, when she would answer coherently, but in a whisper. When left to herself, she would soon subside into a semi-comatose condition with stertorous respirations. was no paralysis of either face, arm or leg, the tongue was protruded evenly, but there was loss of sensation on the right side of the body. The pupils were normal and responded to light. Physical examination showed the patient not to be very anæmic, lungs normal, mitral regurgitation, liver and abdominal viscera were normal. The urine, which was of normal color and acid reaction, and of sp. gr. 1024, contained albumin, with hyaline and small granular casts and some fatty epithelium. Pulse 100, respiration 20, temperature 99°. The patient was given infusion digitalis twice a day. Her condition remained the same until April 28th, forty-eight hours after admission, when she developed symptoms of cedema of the lungs, with pulse 100, respiration 45, and temperature 102° F. The patient was given four hypodermatic injections of thirty minims, each containing twenty grains of the carbonate of ammonia, with evident improvement in the breathing and condition of the pulse. soon as this was discontinued, however, her condition grew rapidly worse and she died at 5 P. M.

Autopsy. There was some increase of serum in the lateral ventricles and on the posterior part of the right lobe of the cerebrum, there was also some congestion and a small hemorrhage into the substance of the lobe. The third ventricle contained bloody serum. The right lobe of the cerebellum was soft to the touch, and one section was found to be half full of a blood clot, which had destroyed its substance and broken into the fourth ventricle, extending to the aqueduct of Sylvius. The lungs showed small amount of fibroid phthisis at both apices and cedema over the rest of the lungs. The heart was thickened and contracted at the mitral valves, the other valves being normal. The kid-

neys showed fatty changes at the cortex. Spleen was normal. The liver was fattily degenerated in spots; size normal; uterus normal.

CASE III. J. H., colored, age 18, male, single, laborer, born in the United States. Admitted to the hospital April 13, 1885. No family history was given. Patient was admitted to St. Vincent's Hospital April 10th, with a history of headache for a month past, but had been able to continue work up to the time of admission, when it increased in intensity and became so severe, that he was obliged to go to bed. After his admission to St. Vincent's Hospital, the patient developed paralysis and coma. Three days later, when brought to Bellevue Hospital, the patient was unconscious, the left pupil was widely dilated, the right normal, and both were insensitive to light. The breathing was rapid and stertorous, pulse 75 and heart action strong. abdomen was contracted and the trachea full of râles. flexor muscles of the arms and legs were equally contracted and there was marked rigidity of the muscles of the neck and back. the urine and fæces were passed involuntarily; temperature 98° per rectum. Pulmonary cedema developed at 3 P. M., and the pulse became rapid and weak. Cups were applied to chest and blisters to the nape of the neck and half an ounce of whiskey was given without relief. Both pupils now became equally dilated. The patient died comatose, at 8 P. M.

Autopsy. A large clot was found in the cerebellum at the left of the fourth ventricle. Both lateral ventricles were filled with fluid. The brain tissue was softened and moist. There was no marked congestion or signs of meningitis. The source of the hemorrhage could not be made out. The heart was normal. There was an atheromatous patch on the aorta. The kidneys showed cloudy swelling.

CASE IV. E. L. S., age 57, colored, carriage-body maker, born in the United States. For some months prior to coming under observation, the patient had suffered from headache, more or less constant, which was referred to the occipital region. During the last two weeks the headache had become more severe, but was not sufficient to prevent him from continuing with his daily avocation. During Sunday, March 14, the patient complained of his head feeling queerly, but was able to be up and about. On the following morning, however, he was seized with an attack of vomiting, accompanied with vertigo, which continued throughout the day. The patient was conscious and would answer questions audibly, although the voice was thick

and there was a good deal of difficulty in manipulating the tongue. There was no actual paralysis although the patient was unable to stand. Late in the afternoon he became unconscious, was restless, constantly moving the head about. The coma gradually deepened and the respirations became stertorous until 6 P. M., when he died.

Autopsy. There was no evidence of congestion or inflammation of the membranes of the brain. The arteries at the base showed arterio-sclerosis. In the substance of the right lobe of the cerebellum, was found a large dark blood-clot, which had broken down the substance of the lobe and extended into the fourth ventricle. The lateral and third ventricles were filled with bloody serum, and one or two small clots in each lateral horn; liver normal; spleen normal; kidney showed slight amount of congestion at the cortex. Heart—The walls of the left ventricle were enormously hypertrophied, but the cavity itself was not enlarged, the valves were normal. There was diffuse thickening along the coronary arteries. The walls of the aorta were thickened.

The reports of twenty cases of hemorrhage into the cerebellum, which have been published in the last twenty years, were carefully collected and analyzed, and the symptoms and postmortem findings, tabulated:

|        | SYMPTOMS. •  |           |             |          |                  |       |                       | POST-MORTEM<br>FINDINGS. |                     |       |           |                      |
|--------|--------------|-----------|-------------|----------|------------------|-------|-----------------------|--------------------------|---------------------|-------|-----------|----------------------|
| Case.  | Headache.    | Vomiting. | Hemiplegia. | Vertigo. | Inco-ordination. | Coma. | Contracted<br>Pupils. | Conjugate<br>Deviation.  | Duration of Attack. | Lobe. | Peduncle. | Fourth<br>Ventricle. |
| 1      | Yes          | Yes       | Left        |          |                  | Yes   |                       | _                        | 6 hrs.              | Right | _         |                      |
| 2      | Yes          | Yes       |             | Yes      |                  | Yes   | Yes                   | _                        | 10 hrs.             | Left  |           | Yes                  |
| 3      |              | Yes       |             |          | _                | Yes   | _                     | To right                 | 3 dys.              | Left  | _         |                      |
| 4      | Yes          |           |             | _        | _                | Yes   | _                     |                          | 12 hrs              | Left  | _         | Yes                  |
| 5<br>6 | _            | _         |             |          |                  | Yes   | _                     | _                        | ı hr.               | Left  | _         | _                    |
| 6      | _            |           |             |          | Yes              | Yes   |                       |                          | 2 dys.              | Right | _         | Yes                  |
| 7<br>8 | _            | Yes       | Yes         | Yes      | Yes              | Yes   | Yes                   | _                        | 2 dys.              | Right | _         | Yes                  |
|        |              | Yes       |             | Yes      |                  | Yes   | Yes                   |                          | 8 hrs.              | Left  | -         | Yes                  |
| 9      |              |           | Left        |          |                  | Yes   | Yes                   | _                        | ı hr.               | Right | _         | _                    |
| 10     | _            | Yes       | _           | Yes      | Yes              | Yes   |                       | _                        | 6 hrs.              | Right | _         |                      |
| 11     |              |           |             |          |                  | Yes   | Yes                   |                          | 13 hrs.             | M'um  | _         |                      |
| 12     | Yes          |           | Yes         | Yes      |                  | Yes   | <del></del>           | _                        | 5 hrs.              | Right | 5         | Yes                  |
| 13     | <del>-</del> | Yes       | Left        |          | Yes              |       | Yes                   | _                        | 24 hrs.             | D: 44 | Right     | _                    |
| 14     | Yes          | Yes       | Left        | Yes      | _                | Yes   | _                     | <u> </u>                 | 3 dys.              | Right | _         | -                    |
| 15     | 37           | 77        | Right       | _        |                  | Yes   |                       | To right                 | 24 hrs.             | Left  | _         |                      |
| 16     | y es         | Yes       | D:-1-4      | _        | _                | Semi  | <del>-</del>          | m                        | 12 hrs.             | Left  |           | _                    |
| 17     | _            | _         | Right       |          | _                | Semi  |                       | To right                 | 6 dys.              | Left  | _         | 77                   |
| 18     | 37           | _         | 37          |          | _                | Semi  | _                     | _                        | 2 dys.              | Right | _         | Yes-                 |
| 19     | Yes          | 37.00     | Yes         | 37       | _                | Yes   | _                     | _                        | 4 dys.              | Left  | _         | 37                   |
| 20     | Yes          | Yes       | _           | Yes      | _                | Yes   | _                     |                          | 12 hrs.             | Left  | _         | Yes.                 |

By reference to the above table, it will be seen that the most constant symptoms were vomiting, occurring in fifty-five per cent of the cases, paralysis in forty-five per cent, headache in forty per cent, and vertigo in thirty-five per cent. The headache, usually in the occipital region and sometimes very severe, generally preceding the onset of the more serious symptoms, by a longer or shorter period, varying from a few days to several weeks and in one instance there was severe headache for two months prior to the attack. Paralysis occurred in nine out of the twenty cases. In four cases it was confined to the left side, and in two cases to the right side, opposite the lesion. In one instance the upper extremities were free, while the lower limbs were paralyzed.

The onset of unconsciousness was very inconstant. In all but four cases it developed at some time before death, while in three cases the patients were in a semi-comatose condition, and in one instance, the patient retained consciousness until the end.

According to Ross, hemorrhage into the cerebellum may, or may not, be accompanied by loss of consciousness, occipital headache and vomiting, and paralysis, crossed or direct. A focus of large hemorrhage may, without doubt, exist in either hemisphere of the cerebellum, without recognizable symptoms and it is only when the middle lobe has been encroached upon, or the fourth ventricle has become filled with the clot, so as to produce pressure upon the pons and medulla, that apoplexy develops suddenly, with uniform symptoms and terminates in death.

If there is no paralysis at the beginning of the attack, and accompanying the vomiting, which is sometimes very violent, and if paralysis subsequently develops, little by little, hemorrhage into the cerebellum may be suspected. When the attack begins with occipital headache, persistent vomiting, vertigo and muscular asthenia and astasia, then the suspicion of cerebellar apoplexy is stronger.

If the stroke and paralysis come together, then the diagnosis from cerebral apoplexy is impossible. An apoplectic stroke, with semi-coma or coma, and without much hemiplegia or with facial paralysis, vomiting and headache, suggests a cerebellar lesion. Rigidity of the limbs and evidence of pressure on the floor of the fourth ventricle strengthens the ground for such diagnosis.

As pointed out by Dana, unilateral differences of temperature point to cerebral hemorrhage; the absence, therefore, of

such differences of temperature or sub-normal temperature taken with the other symptoms, are facts pointing to a cerebellar lesion.

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## ABSTRACT OF A LECTURE BEFORE THE MEDICAL CLASS, JUNE 7TH, 1897.

By PROF. C. A. LINDSLEY.

Gentlemen: As this is the concluding lecture of the course and my final appearance before you in the capacity of teacher, perhaps I can make it profitable to you if I spend a part of the hour in giving you some suggestions and hints that may be useful to you in the beginning of your professional career.

The first thing that I will say to you is, the medical profession is an honorable profession. I wish to say it impressively and with emphasis. The better element of the medical profession has always commanded the respect and confidence of the public. Every man who joins it takes upon himself an obligation to maintain its dignity and honor, to do his utmost to exalt its standing and to extend its usefulness. Therefore let me say to you that in all your future, whenever you are in doubt in regard to any course of conduct, stop and consider whether such conduct will reflect honor or discredit upon the profession of which you are a member, and govern yourself accordingly. There is no profession in which purity of character, integrity and moral excellence are more required.

Two objects will prominently claim your attention, throughout your practice. First, To so treat your patients as to secure the best results in their recovery, or the mitigation of their sufferings. Second, To obtain a proper and reasonable compensation for your services. The practice of medicine has two sides—a professional side and a business side.

Your Patients. All this implies that you will have patients. So you will. Don't give yourselves anxiety on that score. No one bearing the credentials of the Medical Department of Yale University, who conducts himself with propriety, and as a good citizen, ever fails to get his due share of patronage from the community in which he locates. Perhaps you would like to have me tell you how to get patients quickly. Let me tell you then, there is no high road to immediate professional occupation. The key to success is character. You cannot get the business of the people until you have got their confidence. You must let them know

what manner of man you are. Your education and preparation for practice entitles you to expect the support of the best element in the community. But that will come slowly. The best element is intelligent, judicious and cautious.

Now reflect a moment. The good public have no means whatever of judging of your professional abilities. They cannot tell whether the remedies you employ are judiciously selected and skillfully applied or not. Your reputation in the community in which you will live will be based upon entirely different data. Your personal character and conduct will in large degree be the basis of your professional standing. What are called "good families" do not choose as their family physician the young man who is often seen loitering about cigar shops, billiard rooms, frequenting beer saloons and associating with low company. If you would expect the patronage of gentlemen you must be a gentleman yourself. It is not sufficient to have only the manners of a gentleman, you must have also the habits, the practices and the appearance of a gentleman. Fortunately, it is not expensive. It does not require costly embellishments, or ostentatious display. The order of gentlemen is not limited to the wealthy. Be modest in your apparel and above all things be cleanly. If you have begun the pernicious practice of smoking. you had better abandon it as soon as you begin the practice of medicine. But if the habit is unconquerable it will be wise for you to always change your clothes and take a bath before you pollute the air of a sick room with the vile effluvia of stale tobacco. If you indulge in the detestable habit of chewing tobacco then I can give you no better advice than to turn your attention exclusively to veterinary practice.

Your Associates. Treat every one with courtesy and respect, comport yourself with due regard to your position, and do not permit undignified familiarity from your inferiors. If any one hails you on the street, "Hello, Doc.," don't respond. Assume that he did not call you, until he calls you by your right title. Be prudent in the choice of your associates. They are indicative of your own tastes and tendencies, and form an important factor in your reputation.

Your Office. Have your office appropriately and neatly furnished, without extravagant display. Make no conspicuous show of instruments, such as scalpels, obstetric forceps, catheters or vaginal specula, or skeletons. They offend good taste and readily betray your purpose. You will need a "sign" to hang upon the outer wall of your office. It is your card of introduction to the

public. It is a small matter. I mean, don't have it four feet long and the letters as big as a grocer's sign. Such a sign implies more than is for your good reputation. Doctors exhibiting very large and numerous signs are often observed to cultivate the business side of their profession more attentively than the other and to seek to increase their patients by low fees and other unprofessional methods. It is not necessary to add the words "Physician and Surgeon," if you attach to your name your title, "Dr." or "M.D." It is, a sorry compliment to the intelligence of the people that you think they need to have your title defined.

Avoid newspaper notoriety in seeking to have the cases you attend communicated to the reporters. Your relation to your patients is largely confidential. It is a betrayal of confidence to make yourself a medium of publicity. Only in exceptional cases of distinguished citizens has the general public any right to enquire into the confidences of the sick chamber. And when your name is mentioned in connection with attendance upon other persons, it will always be attributed to your own seeking, and for purely mercenary reasons.

In the early months of your candidacy for practice you will have perhaps some leisure time upon your hands. Do not make your office a lounging place for your acquaintances. They will repel more profitable visitors. Let your callers always find you engaged with your books or your microscope or some professional work. Establish regular hours for office consultations and keep them as rigidly as practicable.

Do not fall into the fatal error that you have finished your medical education with the reception of your diploma. But begin at once a systematic course of reading, and make it the habit of your life to keep up to your present standard your knowledge of the several departments of medical learning. Review, review, review. Hold yourself samper paratas to take an examination in any other State in the Union to which circumstances may require you to go. Neglect of this may in the future put you in a very embarrassing situation. The constant observance of it will always be valuable to you and give you a great advantage over those with whom you are called to consult, if they have neglected it.

Take two or more medical journals and read them—critically but not creditionally. There are too many medical periodicals and much that they contain is only padding and stuffing. You must learn to thresh the wheat and winnow it from the that.

Identify yourself with your State Medical Society and with your local medical organizations, and do your part in promoting their usefulness.

If you have opportunity connect yourself with a hospital. You know the advantages of hospital service in the greater variety of diseases to be studied and in observing the effects of treatment under trained nursing and skilled observation.

Now a few words about the druggist. Make an early and personal acquaintance with the druggists of the town. If they are all equally reliable, let your patients elect from which they will procure your prescriptions. Sending all your prescriptions to the same druggist leads to a suspicion that there may be some collusion as to profits.

Although you may be well informed on the materia medica, yet you may recognize the fact that you are not a pharmacist. There will often arise occasions when you will desire to combine medicines in the most palatable and acceptable form. Don't think it will be at all derogatory to your standing to call upon Mr. Apothecary and ask his advice. He will feel complimented at your recognition of his experience and superior knowledge, and may sometime take occasion to say to a customer that your perscriptions are always prepared secundum artem, and are never the queer mixtures that some other doctors write for. If you are wise you will make your apothecary very helpful to you.

Contract Doctors. In every city and large town there are organized associations of various kinds. It is a common practice for them to employ a society doctor, who for a small sum per capita contracts to attend any sick member, when called upon, for a year. This is quite unprofessional, a merely commercial transaction. It lowers professional service to the level of manual labor for wages. Or worse, the doctor has put his services for sale on the bargain counter. In his relation to his patient he has the worse of the contract, because if he refuses to attend him he loses the whole year's salary, while if the patient refuses to employ him he loses only the pittance that his share amounts to. There are other objectionable features which I will not stop to mention. Don't put your services for sale in that market.

Keep Record of all Your Important Cases. It is the only way to utilize and make profitable your experience with numerous cases. Memory is altogether inadequate. Especially take note of any idiosyncrasies in your patients. In subsequent attendance on patients review your notes, and astonish them with what they told you at your former visits. You will have won their confidence and will have deserved it.

Collect Your Bills. For temporary patients render your bills when you have ceased attendance. For your regular families, send your bills at stated times. Never let them run on until Most people can pay small they accumulate to large figures. bills frequently, easier than large ones at longer intervals. the doctor's bill gets inconveniently large it is apt to be indefinitely postponed and the patient will change his doctor. Besides, he will always think more highly of you if he pays you, than if he owes you. There is still another advantage. If your patients pay you, you can the more easily pay your own bills. And just here let me say—keep out of debt yourself. Keep itemized accounts, as regards visits, operations, etc. not itemize your bills, unless so requested. You cannot itemize brain products. You cannot put special values upon your counsel and advice.

Certificates. You will be frequently importuned to write your opinion of the merits of copyrighted medicines, medicated wines, mineral waters, beef-extracts, health resorts, etc. My advice to you is, don't do it. Do not prostitute your title of M.D. to enhance the sale of articles that will not sell on their own merits, but require certificates of merit to recommend them. There are still apparently enough of the clerical profession to supply a reasonable amount of such testimonials.

I regret to say that there are too many practitioners who acquire their knowledge of materia medica and Therapeutics from the envelopes and printed wrappers of proprietary preparations. New preparations are thrust into our offices daily, with a mass of accompanying literature and a modest request that we will give them a trial. Does it never occur to the mercenary souls of these inventors of new compounds that we physicians have no justification in using our patients as tests for their unknown and strange mixtures. I have buried bushels of their stuff, that has been left at my office, three feet under ground, as the only prudent way to dispose of it.

Gentlemen, the United States Dispensatory is a body of Materia Medica that is trustworthy and reliable. You will find there all that you need, and you can use it with more confidence than the secret productions of irresponsible commercial manufacturers.

Cultivate a cheerful manner in your intercourse with your patients. It gives them encouragement and hope, and hope is a great tonic and powerful stimulant. It has rescued many a one from death. It is legitimate practice. Give sympathetic

attention to the complaints of your patient although they may seem trivial to the medical mind. Your attention will give him confidence.

The practitioner of medicine meets with all sorts and conditions of men, and he will experience a corresponding variety of treatment from them as patients. Among the most annoying is an abrupt dismissal, and the employment in his stead of another whom he knows to be inferior to himself. It may be an old nurse or even a Homocopathist. This is the common experience of all physicians. None escape it. You must learn to take it patiently and philosophically. There is no remedy. Every man has the right to choose who shall attend him. The trouble is often due to officious and malicious neighbors. But still you can't help it and don't grumble.

Specialists. This is an age of specialists. I even suspect that some of you have that fad in your heads. Let me tell you now that there is not a true specialist among you, and in the nature of things there cannot be in the next five or ten years. A true specialist is the natural outgrowth of general practice. No man can be a good specialist who has not a practical knowledge of other diseases. A practical knowledge derived from seeing and treating such diseases. One can't get it from books any more than he can learn to make a shoe from reading books He might make something that looked like a shoe. Attend to general practice for the next ten years and let your specialty be the product of that, if you choose to practice one. Otherwise a real specialist would be a miracle.

Your fellow practitioners. Your local competitors. What should be your relations to them? By all means friendly, always. If not so, be sure that it is not your fault. It is most unfortunate that the relations between neighboring physicians are so often strained. You will frequently hear the quotation, "When doctors disagree, etc.," as if it referred to doctors of medicine. But its original application was to the theological doctors, and it is rumored that they still disagree.

The differences among medical doctors is prominently due to the fact that they do not preach to congregations, nor do they argue their cases in open court. They do their professional work alone. But they are frequently and unavoidably brought into close contact with mischievous gossips, who are often self-constituted partisans of different doctors, and in their zeal for their favorite, circulate defamatory and false rumors of the others. In time you will probably hear that some one has said that he "would not have you to doctor a sick kitten." Your reply might be, "He is quite right; I never have doctored sick kittens." At any event, don't take it seriously or let it give you any uneasiness. It undoubtedly originated with some mischievous babbler, and is not deserving of another thought. It is the fate of doctors to be slandered. They have to take it as patients do their medicine. It is disagreeable, but it will do them good if they take it right when offered.

If you will make the following the inviolable rule of your life you will escape a vast deal of trouble.

Never utter a word derogatory of the merits of your professional brethren to a layman. Give no nourishment to the gossips. Disregard all mere rumors about yourself. Let your daily life and conduct take care of them.

Finally, gentlemen, for your guide in professional life, let me refer you to the "Code of Ethics." It has been adopted by the American Medical Association, and by all the members of our profession who desire to pursue an upright and honorable career. It has stood the test of generations, and is as true and fresh today as it was when first written nearly one hundred years ago. Make that your oracle, if your purpose is to bear with credit and honor the high responsibilities which your professional duties will impose upon you.

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A very important piece of legislation has just been enacted by the Connecticut State Legislature, under the title of the "Medical Practice Act." Year after year the necessity of such a law has been urged upon the law-makers, by the representatives of the Connecticut Medical Society and others, but not until the present session have their efforts been entirely successful. most important section of this new law which will go into effect July 1, 1897, is as follows: "No person, after the passage of this Act, shall obtain or receive a certificate of registration as required by the provision of Chapter CLVIII, of the public acts of 1893, until he has passed a satisfactory examination before one of the examining committees appointed for that purpose, under the provisions of said act, nor until he has complied with the other requirements of said act." For the examination of candidates, three committees consisting of five physicians each have been appointed, and each committee can frame its own questions. All examinations must be in writing and the subjects required are Anatomy, Physiology, Medical Chemistry, Obstetrics, Hygiene, Pathology, Diagnosis,

Therapeutics, including practice and Materia Medica. An applicant has the privilege of choosing which committee shall examine him, but before taking such examination he shall pay to the committee their expenses—not exceeding the sum of ten dollars, however. Having been rejected by any one of these committees, he shall not be eligible to another examination until twelve months have expired.

The penalty for violation of this Act has been fixed at a fine of not less than \$100 nor more than \$300 for first offense, and for each subsequent offense not less than \$200, nor more than \$500, or from 30 to 90 days in the county jail. One-half of the fine collected goes to the person or persons making the complaint and the other half to the State Board of Health. While at first glance this Act appears very sweeping, it must be said that it had the backing of every reputable physician and medical organization in the State. The public safety is dependent on just such legislation and Connecticut is not alone, for several States have similar laws. If it be enforced it will certainly prove the cause of raising the standard of the profession in this State.

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UNDER the department of Items of Interest will be found an extract from President Dwight's annual report of Yale University. This extract relates to the Medical School and puts forth strongly the desirability of further improvements to meet the increasing demands of this department of the University. Among these are mentioned, a larger dispensary building, and endowments for several chairs, especially those of Chemistry, Physiology, Pathology and Anatomy. It is very pleasant to note that two recent bequests to Yale University have been handed over to the Medical School for the improvement and enlargement of this department. The bequest of \$50,000, made by the late George Bliss of New York City, has been added to the General Fund of the Medical School and will be known as the Bliss Fund. The bequest of \$25,000 in memory of Dr. Ebenezer K. Hunt of Hartford, made by his widow, Mrs. Mary C. Hunt, will be devoted to some chair of the Medical School, and will be known as the Hunt Memorial.

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We take pleasure in announcing the election of J. H. Hurst for chairman, and J. W. Nolan for business manager, of the Editorial Board for the next year. H. G. Watson has been appointed temporary chairman in the absence of Mr. Hurst.

#### COMMUNCIATIONS.

## ELECTRICITY AS APPLIED TO MEDICINE AND SURGERY.\*

The discoveries, inventions and developments in electricity which the last twenty years have brought forth, have naturally given electro-therapeutics an impetus that bids fair to make it the most versatile and at the same time the most positive curative agent known to humanity, and I hope the time may soon come when every member of our profession will be prepared to use this agent with a full understanding of its scope and action.

Of equal importance are the different devices wherein electricity is used for diagnostic purposes.

It is unquestionably true that in order to manipulate the electrical current some preparation and study is necessary, and I regret that this should be one of the reasons that prevents physicians from using it. However, the difficulty is not as great as many imagine, and with judicious reading and some practical instruction this obstacle may be overcome by any physician desirous of adding this powerful curative agent to his equipment. There are several text-books which give all the necessary information on electro-physics, electro-physiology and electro-therapy in a concise manner, and these being thoroughly understood the handling of the apparatus and the scientific application of electricity can be easily learned.

Another objection to the more general use of electricity is the expense of an installation. There certainly are a great variety of instruments in the market, some very elaborate and ornamental, others more simple but all more or less expensive. There being a limited demand as yet for medical electrical apparatus, it is natural that manufacturers should have to charge exorbitant prices, but when the demand increases, competition will arise and prices will be reduced. Experience has taught me that the simplest and least complicated apparatus is always the best, and if the essential features for scientific accuracy are present the appearance of the instrument is of little consequence.

It is not the purpose of this paper to go into a detailed description of all the different forms of batteries and other generators of electricity, but I shall confine myself to an enumeration of the different forms of the agent that can be used in our work as physicians or surgeons.

<sup>\*</sup> Read before the Fairfield County Medical Society, October 13, 1896.

There are four principal currents, subdivisible according to the method of application; they are:

- 1. The galvanic, or battery current.
- 2. The faradic, or induced current.
- 3. The franclinic, or static current.
- 4. The sinusoidal, or alternating current.

Each one of these is possessed of different physical and therapeutic properties, and it is on a judicious selection of the form of current in each case, where the use of electricity is indicated, that success in electro-therapy depends.

Following are the usual terms employed in medical electricity:

Amperage, means the volume of current.

Voltage, expresses the speed or pressure.

Cuulomb, is the quantity of current.

Ohm, represents the unit of resistance to be overcome by the current.

A Watt is the unit of electrical power and is the result of amperage and voltage combined.

We will now briefly consider the different currents and their characteristics, and will begin with galvanism.

The galvanic current used in medicine is of low voltage but high amperage, comparatively. It can be best generated from a number of cells of the Leclanché type on account of their durability; from 40 to 50 of these cells are necessary. The bichromate of potassium cell is also used but becomes exhausted much sooner than the first named.

The galvanic or direct current flows steadily and always in the same direction from positive to negative. Its action is principally chemical but in a small degree mechanical. It does not produce shocks or muscular contractions except when interrupted or in opening and closing the circuit. In flowing through the tissues the galvanic current acts principally on the liquids contained therein, decomposing them, and breaking up the atomic combinations and rearranging them, hydrogen and the alkalies going to the negative pole, while oxygen and the acids collect at the positive. Besides this chemical action the galvanic current is a stimulant to the circulation of blood and Furthermore the positive pole has a sedative action on the sensory nerves, while the negative pole produces hyperæs-Another property of the current is its ability to carry substances with it through the tissues, and this is called cataphoresis.

These different actions of the galvanic current are made use

of to remove exudations, swellings or congestion, to increase nutrition of all the tissues, nerves included, to stimulate absorption, and to assist in disassimilation. The sedative property of the positive pole may be applied to relieve neuralgia and all pains caused by local irritation.

Cataphoresis enables us to introduce substances into the tissues in order to bring about certain effects—for instance, cocaine to produce anæsthesia.

The electrolytic or decomposing property of the current, which is strongest at the poles, may be taken advantage of to generate certain localized chemical action.

The negative pole, as stated above, gathers about it hydrogen and alkalies; these latter have a softening influence on the tissues with which they come in contact.

It is on this principle that Newman's electrolysis of urethral strictures is based, the negative pole, consisting of a metallic bulb on a bougie, being brought in contact with the stricture, and a mild current turned on. It will soon be noticed that the stricture yields, and after a small number of applications the stricture is invariably removed and the patient is cured.

An operation with the knife, or dilatation, is only exceptionally successful because it does not remove the hard cicatricial tissue but only stretches or cuts it, leaving it fully able to do more mischief later.

I consider electrolysis for urethral strictures one of the greatest triumphs of electro-therapy. This same action of the negative pole is made use of to remove hair, blemishes, and small growths from any part of the body. The electrolytic effect at the positive pole consists in the accumulation of oxygen and acids, the hardening of tissues and their depletion of blood. is thus that the bleeding from the uterus may be arrested in certain forms of endometritis as well as in cases of interstitial and submucous fibroids of that organ. If the electrode forming the positive pole is of metal the acids accumulating around it will soon attack it and salts be formed; for example, in a case of a copper electrode, the oxychloride of copper will appear, or with a zinc electrode the oxychloride of zinc will be evolved; these salts are not only in contact with the tissues but by cataphoric action are driven into them to a certain depth, producing their specific effects. This is called metallic electrolysis.

The galvanic current is also used to ascertain the reaction of certain nerves of the body to the opening and closing of the galvanic current flow, and according to certain established facts and rules it can be seen whether the nerves are in a healthy state or not. In this way is discovered the so-called reaction of degeneration.

The faradic or induced current has a small amperage, but a more or less high tension which varies according to the secondary coil employed. It is probable that this current has but a very small chemical action, but it is a powerful stimulant to the nerves, muscles and blood vessels. If the secondary coil is of heavy wire of moderate length, the current produced is stimulating, even irritating, and if applied to a painful spot will increase the pain. It is principally used to relieve muscular atrophy, peripheral paralysis, malnutrition of the parts and under-development.

In gynecology it has been found useful in cases of dysmenorrhæa, caused by lack of tone and immaturity of the uterus and ovaries, and also in hyperinvolution.

The faradic or induced current from a coil of fine wire of great length has a sedative action. It is generally employed to relieve deep-seated pains, such as ovaralgia and general neuralgia. There is no limit to its uses for the relief of pain, and it is one of the most trustworthy as well as most harmless remedies existing.

The sinusoidal or high tension alternating current has not been used for a sufficiently long time to enable one to fully form an idea of its scope as a therapeutic agent; it is generally employed for its sedative effect, and as its application is almost entirely devoid of pain, many use it in preference to the long and fine wire faradic coil. There are great possibilities in this current, and it will no doubt be more fully developed soon.

We now come to the static or franclinic current, which has an enormous voltage, but only an infinitesimal amperage. Its uses are manifold.

The principal effect of a static current is stimulation. It is a powerful agent for the increase of capillary circulation, and it stimulates the functions of the skin, as can be readily seen during an application of this current, when perspiration becomes quite abundant. In neurasthenia and general debility its action seems most marked, and in chronic muscular rheumatism, also, it is of unquestionable value.

There are a great variety of diseases in which electricity in one form or another will prove of the greatest value, and those who have sufficiently interested themselves have at their command a means of giving quick relief and permanent benefit. However, electricity is not a panacea for all ills, and the cases to be treated should be carefully selected. Nor is it just that all chronic cases in which about every known remedy has been tried in vain, should be thrown on electricity, and then if that agent fails to perform a wonder, to decry it as of no use and of no account.

For electro-cautery work a battery of large amperage and very low voltage is required; by the aid of this instrument it is possible to remove portions of soft tissue without the loss of blood. It is very useful in surgery of the nose and throat, and in all instances where a cautery can be used.

A few words about electricity for diagnostic purposes. The small incandescent light has been used to illuminate the cavities of the body, such as the nose, pharynx, larynx, ear, stomach, rectum, vagina, bladder, etc. Powerful electric light has also been used for translumination.

The latest and most wonderful addition in this line is unquestionably the X-ray, discovered early this year by Prof. Roentgen, of Wurzburg. With the aid of these rays it is possible to obtain a clear outline of organs and structures of our body, otherwise absolutely invisible, and it is hardly worth while to call attention to the marvelous possibilities opened to us by this discovery, which is as yet only in its infancy.

We are at present able to find foreign bodies imbedded in the tissues, such as fragments of glass, needles, bullets, etc., by the aid of the X-rays. It is also an easy matter to determine any abnormalities in the bony structure of the body; we can see the heart and its movements, as well as the liver and other In case of fracture we can by means of the opaque organs. X-rays determine the extent of the displacement, and after the reduction of the latter it is an easy matter to see through bandages and determine whether the fragments of bone are in proper position for union or not. Dislocations of joints can be clearly seen, and proper treatment instituted. In anchylosis of joints it is possible to determine whether the offending overgrowth of tissue is of bony or soft structure. Diseases of bone, such as tuberculosis or cancer, can be detected, and the extent of the disease ascertained.

These are some of the principal uses of electricity in our work, and although I realize that justice cannot be done to the subject in a brief paper like this if I have succeeded in interesting some of you I shall feel that my purpose has been accomplished.

FREDERICK SCHAVOIR, STAMFORD, CONN.

#### LETTER FROM RUSH MEDICAL COLLEGE.

## Editor YALE MEDICAL JOURNAL:

Rush is purely a Western institution. In the catalogue one fails to find the name of a single man coming from east of the Alleghenies, yet every State and Territory in the Union west of that line has representatives, while Canada and Mexico both furnish students. For a Chicagoan Rush is very old, dating back to 1842, so that she was quite an ancient institution when the great fire in 1871, the date to which all events of historical interest in Chicago are referred, destroyed her newly-erected buildings. Since then it has kept full pace with the city in growth, so that now with some seven hundred students it has few peers as to size in the country. Its graduates are scattered throughout the prairies and mountains of the west, an army over five thousand strong, and as faithful to and proud of their alma mater as any graduate of Yale. The present graduating class numbers twohundred and seventy, yet of these forty only have degrees from literary colleges, most of these being the State universities of the West. However, these proportions are much improved in the lower classes, especially since the curriculum has been changed to four years.

How thoroughly western Rush is is shown by the fact that there are but two other graduates of the large Eastern universities in the college-E. D. Whiting, Yale '94 A., and a Harvard man. All the Western men who go East for their literary education seem to remain there for their M.D.'s, yet it is doubtful if a college graduate living here in the West could do better than to study medicine in his own country. The very rarity of the college graduate gives him the most exceptional advantages that he would not be likely to obtain in the East. There are many assistantships open to just such men, which while not interfering with their studies place the holders in a position to get the best of all that is going on about the college. For instance, Mr. Whiting has occupied, until recently elected first interne in the Presbyterian Hospital, the position of demonstrator of clinical microscopy; while the writer has acted as pathologist to the surgical clinic, as well as being assistant to the professor of morbid anatomy, Dr. Hektoen. Again I believe that Yale men are open to a particularly favorable reception. In the first place Yale has two representatives on the faculty-James Nevins Hyde, professor of dermatology; and Dr. Bevan, professor of anatomy. Also Mr. Whiting last year captured the Freer prize

with a thesis on malaria of such superior merit that he not only made a name for himself, but practically established a new standard for original student investigation in this institution, and placed Yale's reputation here at a very high point.

Of course everything here radiates more or less about our great surgeon, Nicholas Senn, whose clinics are not to be sur-Such is his reputation that most of the more difficult cases throughout the entire Northwest drift here, so that often his clinics, which begin a 2 P. M., are only closed after half-past six through want of light or endurance, while many cases are awaiting their turns outside. Only yesterday he operated in one clinic on fifteen cases, all of them major operations. This combined with his forceful teaching and impressive manner, makes these clinics of inestimable value. Rush has also added to her corps of instructors the celebrated pathologist, Edwin Klebs, who has recently come to the West from the Fatherland. sides these two, Professors Hyde in dermatology, Lyman in medicine, and Haines in chemistry, are well known throughout the country, and with the younger and perhaps less widely known members make a faculty that can be excelled by but few of the Eastern schools.

Another thing Rush possesses is a wonderful abundance of clinical material. Some 20,000 patients are treated annually in the minor dispensary clinics, where the students are allowed to take part, and from these a great abundance of interesting or typical cases are funished for the major clinics in the amphitheater. The Presbyterian Hospital, with about five hundred beds, is directly connected to the college, so that patients can be brought into the amphitheater for demonstration or operation. The Cook County Hospital is just across the street, and here clinics are held frequently on cases selected from its wealth of material, while in the necropsy theater Professor Hektoen holds two autopsies weekly.

And, finally, after our college man has graduated, there is a great chance for an interneship in a good hospital. The Cook County Hospital elects twelve internes by competitive examinations from graduates of all the Chicago schools, and since here the interne is more master of the situation than in any other hospital I know of, the places are contested for most fiercely. The Presbyterian Hospital elects eight men from Rush alone. The past year Rush secured six places in the County Hospital, and twenty-five interneships in other hospitals in the city, a record of which we are very proud.

So I believe that many of our Yale graduates who live in the West would be seizing a grand opportunity by studying here or in some other good Western school. At least I do not regret staying here, even after reading my friend Evans' interesting letter from Johns Hopkins last month. It gives me great pleasure to be able to spread out the advantages and character of an institution that I suppose is little known in the East, and I am very grateful to the editors of the Journal for this opportunity.

H. GIDEON WELLS, YALE '95 S.

## MEDICAL SOCIETY REPORTS.

MIDDLESEX COUNTY MEDICAL ASSOCIATION.—The one hundred and fifth annual meeting of the Middlesex County Medical Association was held in the County Court House, Haddam, April 23d, 1897. The following nineteen members were present: Edgerton, Hazen, Calef, Potter, Sears, Loveland, Bailey, Campbell, M. D. Murphy, J. Murphy, Maitland, Mead, Plumstead, Lawson, Smith, French, Grannis, Cowles and F. K. Hallock.

The meeting was called to order at 10:30 A. M. by Dr. F. D. Edgerton. Dr. J. Francis Calef of Middletown was elected President. Dr. Frank K. Hallock of Cromwell was elected Clerk. Minutes of the last annual meeting were read and approved. Dr. Frederick Stanley Cowles, Westbrook, was proposed for membership in the society.

The following cases were reported: Dr. Frank E. Potter of Portland, "A Case of Profound Opium Poisoning"; Dr. Kate C. Mead of Middletown, "Use of the Bicycle for Women"; Dr. Minor C. Hazen of Haddam, "Obscure Case of Abdominal Tumor;" Dr. Frank K. Hallock of Cromwell, "The Value of Correct Sitting as an Exercise for Invalids"; Dr. J. Francis Calef of Middletown, "The Relation of the Psychosis of Childhood to Future Pauperism, Crime and Insanity."

1:00 P. M.—Adjourned for dinner; after which Dr. John E. Loveland of Middletown read a paper on the "Use of the X-rays in Fracture," showing photographs and exhibiting patient.

All papers were referred to the State committee for publication.

The election of Fellows resulted as follows: J. E. Bailey, J. E. Loveland, A. J. Campbell, K. C. Mead, C. A. Sears: alter-

nates, J. H. Grannis, F. E. Potter, M. D. Murphy, W. H. Wilson, F. D. Edgerton. Delegates to American Medical Association: M. C. Hazen, F. D. Edgerton, J. H. Granniss. County delegates: Hartford, H. T. French; New Haven, G. N. Lawson; New London, J. H. Granniss; Fairfield, F. E. Potter; Windham, M. W. Plumstead; Litchfield, F. S. Smith; Tolland, E. Matthewson; alternates, J. F. Calef, A. Field, F. S. Cowles, C. A. Sears, J. E. Bailey, S. W. Noyes, C. E. Bush.

The present Censors and County Reporters were reëlected. On recommendation of the Credential Committee the Society voted and did elect Dr. Cowles to membership.

Voted to send expression of sympathy to Dr. Worthington in his recent illness.

Voted to amend by-laws to allow election of Vice-President. Action to be taken at next annual meeting.

Adjourned.

FRANK K. HALLOCK, Clerk.

LITCHFIELD COUNTY MEDICAL ASSOCIATION.—The annual meeting of the Litchfield County Medical Association was held at Winsted, April 27th. The following members were elected officers for the next year: President, W. S. MacLaren; Vice-President, E. H. Welch; Clerk, J. C. Kendall; Reporter, G. D. Ferguson; Censor, J. L. Buel; Fellows, W. S. MacLaren, D. R. Rodgers, G. D. Ferguson, Elias Pratt, W. S. Richards; Delegates to the American Medical Association, E. H. Welch, Elias Pratt, W. S. MacLaren, D. R. Rodgers, J. C. Kendall.

The clerk reported fifty members in the Association; four had been added during the past year, three had died—Dr. J. A. Livingston, aged 28, died December 31, 1896; Dr. B. W. Munson, aged 53, died January 3, 1897; Dr. J. W. Bidwell, in his 73d year, died April 19, 1897.

The by-laws were amended so that the clerk is ex-officio a member of the Nominating Committee, the two other members are appointed at the annual meeting by the President. This arrangement is adopted so that the names reported by the Nominating Committee may be selected with a view to the better distribution of offices and duties.

The Association has adopted the plan of selecting its Fellows and delegates from members who are present at the annual meeting and accept the appointment with the expectation of keeping the appointment.

An assessment of fifty cents was made on the members of the Association.

Dr. F. H. Wiggin was honorably dismissed as he has removed from the State.

Dr. Albert L. House was received on certificate from the Fairfield County Association.

No formal papers were on the program but the discussion of the subject, "Complications and Accidents of Labor" was taken up by all members present.

The subject for discussion at the next meeting will be "Diphtheria; the Differential Diagnosis and Treatment by Antitoxin."

The Summer quarterly meeting will be held at Canaan July 13th.

CONNECTICUT STATE MEDICAL SOCIETY.—The one hundred and fifth annual meeting of the society was held at Kinney Hall, Hartford, May 26th and 27th. The meeting was called to order at 12:10 o'clock on Wednesday by the President, Dr. Rienzi Robinson of Danielson, Conn. The roll of the Fellows of the Society was called and showed a large attendance, all of the Hartford County members being present.

President Robinson in his address said that the Society had as many members at present as it had ever had and its work of the last year had been quite up to the high standard it strove to maintain. Death had taken away some of its most valued members. He called the attention of certain committees to wavs in which their work could be improved. It had been the custom of the society to publish illustrated papers and expect the individuals whose pictures were used to bear the expense. He recommended that hereafter the Society should assume the cost of such publications. He read a letter from the British Medical Society, inviting the Society to send a delegate to the convention at Montreal August 31st. A committee of the following gentlemen was nominated to consider the suggestions made by the President: Dr. Charles A. Lindsley, Dr. J. W. Wright and Dr. T. M. Hills. At 12:35 the meeting adjourned until 1:45.

The afternoon session was opened for the transaction of business and the reports of committees were first in order. The Committee on Unfinished Business had nothing to lay before the meeting.

The Treasurer reported that the total yearly receipts from taxes had been \$871.86 and the general recipts \$4,513.67. The balance on hand May 1st was \$513.67. The receipts were something less than last year. The Committee on Lists of medical colleges stated that it wished to remove no colleges from the pres-

ent list but would add to it the Baltimore Medical College. The report was tabled, as the passage of the bill now pending in the Legislature which relates to the requiring of certificates by surgeons, will remove all need of such lists.

Dr. Lindsley, in reporting for the Membership Committee, announced that the committee suggested that physicians who have Summer homes in this States be made eligible to membership to the Society. At present only those who are residents of the State can become members. The committee also proposed that a resolution be passed limiting the time for the reading of all papers to twenty minutes.

The Committee on County Resolves reported that the New London County Society had pronounced its disapproval of any alienation between a surgeon and any society or lodge. The New Haven County Society had passed for the consideration of the Society a rule that the Publication Committee should consist of the Secretary and two members, of which the Assistant Secretary could not be one.

The association upon the recommendation of the committee voted to drop four members. The report of the committee was accepted. The Standing Committee on Legislation gave a detailed account of the work it had accomplished during the present Legislature. The Medical Examining Committee had held seven sessions and passed twenty candidates. Seven were found to be unqualified. The committee will send a representative to the medical convention to be held at Philadelphia next September. A tribute was paid Dr. H. S. Fuller, whose term in the board of medical examiners expires this year.

The nominating committee reported and offered the following list of officers for election, and they were all elected: President, Dr. Ralph S. Goodwin; Vice-President, Dr. Henry P. Stearns; Secretary, Dr. J. LaPierre; Treasurer, Dr. W. W. Knight. Dr. H. S. Fuller was renominated to the Board of Medical Examiners. Committee on Matters of Professional Interest, Drs. A. A. Crane and C. J. Foote. Committee to Nominate Physicians to the Retreat for the Insane, Drs. J. B. Kent and Francis D. Edgerton. Publication Committee, Drs. J. LaPierre and Gustavus Eliot. Committee on Honorary Members and Degrees, Drs. John Stanton, P. H. Ingalls and George L. Porter. Committee on Arrangements, Drs. Frank Wright, B. L. Lambert and Frederick Bellosa. Dissertator, Dr. F. L. Loomis; alternate, Dr. John C. Lynch.

Delegates were chosen as follows: To Delaware society,

Drs. E. H. Welch, A. N. Alling, Charles A. Tuttle, M. Storrs, F. L. Smith, W. L. Barbour, J. E. Bailey, C. A. Sears, P. Cassidy, E. P. Flint, E. H. Davis, G. P. Davis and J. C. Kendall; Maine, Drs. W. L. Higgins and Miner C. Hayzen; New Hampshire, Drs. F. H. Beeman and C. J. Fox; Vermont, Drs. Elias Pratt and William Welch; Massachusetts, Drs. C. B. Newton, J. M. Benedict and Pierce.

The Committee on the Nomination of Essayist reported the following names: "Progress of Surgery," Dr. G. R. Harris of Norwich and Dr. F. M. Tukey of Bridgeport; "Progress of Medicine," Dr. W. W. Knight of Hartford and Dr. F. M. Tiffany of Stamford.

Ballots were taken for the essayists and the committee's appointments were supported. The meeting appointed for anniversary chairman Dr. Max Mailhouse of New Haven. The Auditing Committee reported that it had found all matters of the Society correct. The Publication Committee were authorized to publish 750 copies of the meeting and a tax of \$2.00 was laid.

The business meeting of the Fellows adjourned at 4 o'clock, and the general session was opened by the reading of the Secretary's report by N. E. Wordin of Bridgeport. There were 622 members in the Society, a gain of forty-five during the year. Thirteen have died and ten have been dropped. The western part of the State showed the more rapid growth, for thirty-two of the new members were from that part of Connecticut. The dawn of the 106th anniversary of the Society was a promising one.

Dr. J. C. Kendall of Norfolk, chairman of the Committee on Matters of Professional Interest in the State, read a paper the first part of which treated of the sterilization of milk. are two methods of milk sterilization used in the State, known as the high and low. The high is objectionable as it produces certain changes. It is often repugnant to the taste and is not as nourishing as unsterilized milk. The low method sterilizes milk by prolonging the time of exposure. One hundred and sixty-five degrees is the favorite temperature, continued for twenty minutes. Thus treated milk is better for the health of the user. He spoke of the recent treatments of typhoid fever. favor the abortive treatment. The eliminative and antiseptic treatments are generally adopted and produce the best results. By these the temperature of the body is kept at a lower point and the period of its highest degree is much shortened. tion is retained, less stimulants are required and all symptoms are less severe. The course of the disease is not materially shortened but it is borne with greater ease and the mortality is diminished.

Further delegates nominated by the nominating committee were reported as follows: Rhode Island, Drs. R. S. Phillips, H. L. Hammond and William A. Crowley; New Jersey, Drs. F. E. Guild and O. J. D. Hughes; New York, Drs. J. E. Bailey, C. A. Munger and G. A. Shelton. Delegate to Bristol Medical Association, Dr. Francis Bacon; to the International Medical Congress at Moscow, Drs. E. K. Root and A. E. Abrams.

Dr. T. M. Bull of Naugatuck next read a paper on "The Practical Treatment of Eczema." He dwelt on the use and rerults of pastes, powders, liniments, etc. These applications are too often made of irritating ingredients and are more likely to retard than assist nature in working a cure.

At 5:45 the President called for Dr. M.M. Johnson's paper, but he made a motion for adjournment and as there were only a few present the meeting adjourned until 9:30 the following morning.

Among the Fellows present were the following: Drs. Rienzi Robinson, Danielson; Frederick Bellosa, New Haven; W. H. Donaldson, Fairfield; F. L. Smith, Stafford Springs; B. L. Lambert, New Haven; Oliver Hughes, Meriden; George R. Harris, Norwich; E. P. Swasey, New Britain; W. T. Richards, West Winsted; R. S. Goodwin, Thomaston; E. A. Milch, West Winsted; W. H. Judson, Danielson; W. A. Kohn, Colchester; J. C. Kendall, Norfolk; John E. Bailey, Middletown; H. T. Miles, Bridgeport; W. S. MacLane, Litchfield; A. J. Campbell, Middletown; W. L. Hammond, Killingly, J. E. Loveland, Middletown, F. E. Guild, Windham; William L. Higgins, South Coventry; J. B. Kent, Putnam; T. Morton Hills, Willimantic; George F. Lewis, Collinsville; Gideon C. Segur, Hartford; J. M. Wright, Bridgeport; J. F. Calef, Middletown; Frederick Gilnach, Rockville; Thomas M. Bull, Naugatuck; W. L. Barber, Waterbury; W. W. Knight, Hartford; C. A. Sears, Portland, and C. S. Rodman, Waterbury.

On Wednesday evening at 7:30 a banquet was held at the Hotel Hartford which was attended by eighty members. Dr. A. G. Cook acted as toastmaster and introduced Governor Cooke of Connecticut. Among others to respond to toasts were President Robinson of the Society, Dr. S. G. Goulay of New York, Judge A. F. Eggleston of Hartford on "Who Shall Decide When Doctors Disagree?" the Rev. J. A. Mulcahy of Hartford, Dr. E. G. Marcy of Boston on "Evolution;" Dr. F. H. Wiggin of New

York on "The Abuse of Free Medical Treatment." The banquet closed at 11:15 o'clock with some remarks by Dr. Storrs of Hartford.

The second and concluding day of the convention was begun at 10 A. M. Thursday. The first thing on the program was the reception of delegates from other societies. Delegates were called from the following State medical societies: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New Jersey and New York. None of the societies responded except New York which was represented by Dr. Wiggin and Dr. Goulay. A letter was read from Stanley P. Warren, delegate of the Maine State Society regretting his inability to be present. The program was then begun by Dr. R. S. Goodwin of Thomaston, who read a paper on "Dr. Edward Jenner and His Great Work" He said: "Jenner's life was given entirely and unselfishly to medicine, to study which he refused many flattering offers made him to become a teacher in college. Recognition as a naturalist was of secondary importance to him and he practiced medicine in a small country town. When he announced that he had made some wonderful discoveries regarding vaccine, he was laughed Proofs of the discoveries were made public but they were regarded more as curiosities than anything else. As a man, he was cordial and large-hearted-his fame was to him always of minor importance when compared with the need of his work. If England ever desired to honor medicine as she had war and statesmanship, then Jenner was the first one whose memory she should perpetuate."

Dr. M. M. Johnson of Hartford read a paper on "The Treatment of Pus Cases in Appendicitis." Dr. Johnson stated that many unsuccessful cases of appendicitis were due to neglect in Often one abscess would be the treatment of the abscesses. treated and others left untouched and the patient be left as bad off, if not worse, than previous to the operation. He gave detailed accounts of several operations performed by him in which he advised the removal of the appendix in all pus cases and the opening of the multiple abscess and irrigation by saline solution from the mouth of a water pitcher. He advised making as small an incision as possible, and used pyrozone as an antiseptic agent. His method of treatment in these cases was severely criticized by many other physicians. Dr. W. S. MacLane didn't agree with the method of irrigation by the water pitcher, as the fluid would not reach the bottom of the pelvic cavity. Dr. Wiggin of New York didn't deem it wise to remove the appendix in all

cases of abscesses especially by a small incision. He might advise such treatment in multiple abscesses but would make a large incision. He preferred peroxide of hydrogen to pyrozone as an antiseptic. Dr. Johnson in reply said his plan had been to remove the appendix in all such cases of abscesses and as he had been successful in all operations and his patients got well he would continue to use such method.

Dr. A. N. Alling of New Haven next read a paper on "Foreign Bodies in the Eye." The smallest bodies often killed the sight of the eye, while larger ones might be removed and the sight still be retained. There were bodies peculiarly injurious on account of their character. A body lodging in the lens of the eye was seldom serious. For the removal of bodies, magnetic needles were often used and various instruments had been invented to locate hidden ones. Dr. Alling passed about the room a set of X-ray pictures, showing different bodies lodged in the eye. He was asked if the use of the X-rays had any injurious effect on the eye. He replied that if the operation was of short duration no bad results would be felt.

Dr. W. S. MacLaren's paper had as its topic "The Progress of Surgery." It was a thorough treatise on the discoveries and theories advanced of late. The new treatment of malignant tumors, fistulas and various forms of disease was spoken of.

Dr. Robinson introduced Dr. R. S. Goodwin, the new President, who said: "I thank you for the honor you have paid me by choosing me for your new President. It is an honor which I appreciate and I will try my best to serve you as best I can." He then called upon Dr. Robinson for the annual address of the President.

"Personality in Medical Science," was the subject of his very interesting paper. He said: "I call your attention to a subject but little discussed yet of great practical interest to the physican who would reach the highest acme of success in his work of saving life and alleviating suffering. The modest physician is chary about discussing with others the matter of his own personality in the sick room, hesitates and shrinks from the attempt even to measure in force units, the weight of that personal presence without which his purely medical treatment would be shorn of much of its value. Many of us, I am sure, are fully aware how much more our patients depend upon us than upon our drugs; how much more our presence of good cheer tones up the flagging spirit, than the tonic prescription of yesterday. We also realize to our lasting regret, how on some days we have

thrown over them the wet blanket of depression. In fact, we have taken our own personality, from which we cannot escape, into the sick room with us, and it has done its work as a tonic or depressant, accommodated to the universal law of force. We keep our armamentarium in perfect order, that we may meet, well prepared, emergency cases. Do we keep ourselves equally well prepared, equally well-guarded, that our own personal influence may, at the opportune moment be to our patient a healing balm, instead of an irritating plaster? Every medical ism or fad has a strong personality behind it and the best showing of this personality during the last century is in the regular profession itself and not out of it."

After the reading of this paper the morning session adjourned until 1:30 in the afternoon.

The afternoon session was opened with an exhaustive report on the progress of medicine by Dr. F. T. Simpson of Hartford.

- Dr. W. G. Murphy of East Hartford read a paper on "Cow's Milk in Infant Feeding." Cow's milk was used as a food for infants to a large extent. As it was used as a substitute for mother's milk it was necessary to make it resemble it as near as possible. Only fresh milk was safe to give a child—after it was twenty-four hours old it was apt to be in a dangerous condition. Richer milk could be safely used in Winter than in Summer, but at all times the quantity given should be limited. Statistics showed that many infant diseases were traceable to milk, and when it was considered how many babies died during the nursing period the need of care in the use of it was manifest.
- Dr. O. T. Osborne of New Haven spoke on "A case of Acromegaly, with Pathological Specimen." Some fifty pictures—X-ray views and microscopic enlargements—were passed around and the bones were placed on exhibition. [Dr. Osborne's article will be found in another place in the JOURNAL.]
- Dr. N. E. Wordin of Bridgeport read a short history of the Connecticut Medical Association. The Association held its first meeting in Middletown in 1793; its by-laws, as they were laid down then, had not been materially changed. It had lived for 105 years under practically the same rules and regulations. When it was founded, there was not an incorporated society of the kind in the land. New London was the first county to establish a society, Litchfield County followed and close after came New Haven. In 1788 a charter was asked for a State society, but objection arose on the ground that it was not well to legislate for a particular class. In 1792 the charter was

granted, but it was not until 1793 that the profession assembled to organize themselves into a well regulated society. The paper mentioned the prominent physicians that had been connected with the society and their influence on the history of medicine in general.

The next paper on the program was "Four Cases of Placenta Previa," by Dr. T. G. Wright of Plainville. Dr. F. H. Wiggin of Litchfield then reported "Five Cases of Uterine Retrodisplacement Treated by Vaginal Fixation (MacKenrodt's Operation)."

At 4 o'clock the meeting adjourned and ended the one hundred and fifth annual session. A number of the delegates and members of the State society remained over, however, to attend a reception given by Dr. G. P. Davis at his residence at No. 30 Woodland street, Hartford.

## ITEMS OF INTEREST.

Extract from President Dwight's report of Yale University for the year 1896-7:

"The late George Bliss, of the City of New York, who died in the year 1896, by his will made a bequest to the University of the sum of \$50,000, to be applied to such uses of the institution as the President might regard as wisest and most desirable, in view of its present needs. This sum, which was passed into the hands of the Treasurer on the settlement of the estate, was not received until a little after the close of the year that is under review in this report, and hence it is not included in the list given above. With the approval of the family of Mr. Bliss, it is now assigned to the Medical Department. It will thus prove a most helpful benefaction to this part of the University, which has been limited in its endowment, at a critical and interesting era in its history when it is moving forward in its work and life in a most encouraging way. The kindly and generous feeling of Mr. Bliss towards the University had been manifested in earlier years, and it continued with him to the end. His name will be held in remembrance and honor by the Corporation, even as it will be by all who knew of his honorable, useful and truly Christian life.

"The Medical Department exhibits every evidence of increasing strength, and all apprehensions with respect to its future prosperity, such as were once entertained by some members of the medical profession and by some other friends of the University, may be laid aside. With the enlargement of its funds, which is so greatly to be desired, and the accompanying development of its facilities for instruction and work in various lines, there can be no further question that the school will be a most vigorous part of the whole institution and will accomplish most valuable results for science and for the honorable and honored profession which it represents.

"The Department received in the early autumn an addition to its funds of the sum of twenty-five thousand dollars—in payment of a legacy bequeathed by the late Mrs. Mary C. Hunt, widow of the late Dr. Ebenezer K. Hunt, of Hartford, Connecticut. The bequest was made in memory of Dr. Hunt and his interest in the great importance of endowments for some of the chairs in the school has been set forth in previous reports—especially for the chairs of Chemistry, Physiology, Pathology, and Anatomy. Reference to this matter is made again in this place, since the growing prosperity of the school in its interior life, and the larger work which it is now called to do, render the securing of such endowments more and more needful. The four chairs alluded to are those which most imperatively require such provision, inasmuch as the professors who hold them are the ones of whom exclusive devotion to the duties of their office is required because of the educational demands of the time. The gentlemen who have filled these positions in recent years have done their work with a generous spirit of loyalty to the interests of the school. They deserve a reward for their labors far beyond what the present limited resources of the Medical Department can give them.

"The Medical Faculty are impressed at the present time, even more than in any previous year, with the inadequacy of the Dispensary building for the work pertaining to it. This inadequacy is felt with reference to its relations both to the school and to the public. In 1889, there was a service at the building of four thousand and twenty-five consultations, whereas in 1896 there were more than twelve thousand consultations."

The Russian Government has decided to label medical men by means of a silver badge one inch wide by one and one-half inches long, having a raised design of two interwined serpents. This is to be worn conspicuously on the breast, and it is hoped that it will prevent the killing of the doctors by excited peasants, a practice that they frequently indulge in during epidemics of cholera and other especially fatal diseases. The population of France in 1895 was less by nearly 17,000 than it was the year before. The falling off is manifestly due to the decreasing birth-rate, which since 1890 has been below the death-rate. Each successive decade since 1800 has shown a constant decrease in the birth-rate, and much fear is felt that France is doomed to become extinct as a nation.

Leprosy is said to be spreading in Spain in a somewhat alarming manner. In the village of Alcubias, near Valencia, more than a dozen families are said to be affected.

The number of medical students in Missouri is reported by the Kansas City *Medical Record* to have decreased over sixty per cent this year, and yet St. Louis heads the list of cities as regards the number of her medical schools.

Out of forty-five new members of the Connecticut State Medical Society, ten are graduates of the Yale Medical School; four each from the University of New York and Physicians and Surgeons, New York; three each from Bellevue, New York, Baltimore Medical College, and Physicians and Surgeons, Baltimore; two each from Harvard, Dartmouth and University of Pennsylvania.

Dr. N. E. Wordin of Bridgeport has written the medical history of Connecticut for a book called "The New England States," and published recently by Henry Hurd & Co., Boston, Mass.

Dr. Pinckney W. Ellsworth formerly a member of the Connecticut State Medical Society, performed the first capital operation ever done upon a patient under the effects of nitrous oxide. His chical notes of the case are among his papers in the possession of his family.

In 1863 the Yale Medical School was known as the Medical Institute of Yale College.

The Mortality Report for April has been received from 165 towns in the State. There were 1,212 deaths reported during the month. This was 157 less than in March, and about the average number of deaths in April for the five years preceding the present.

|                |   | 1897 | 1896 | 1895 | 1894 | 1893 | 1892 |
|----------------|---|------|------|------|------|------|------|
| January, -     | - | 1123 | 1121 | 1036 | 1374 | 1279 | 1953 |
| February,      | - | 1142 | 1094 | 1357 | 1069 | 1106 | 1276 |
| March, -       | - | 1369 | 1288 | 1410 | 990  | 1309 | 1364 |
| First quarter, | - | 3634 | 3503 | 3803 | 3433 | 3694 | 4533 |
| April, -       | - | 1212 | 1255 | 1194 | 1100 | 1395 | 1132 |

The death-rate was 17.1 for the large towns; for the small towns 16.7, and for the whole State 17. The deaths from zymotic diseases were 106, being 8.7 per cent of the total mortality. The following deaths are reported by the Registrars in towns of less than 5,000 population: Scarlet fever 1, cerebro-spinal fever 4, diphtheria and croup 3, whooping cough 2, typhoid fever 1.

## PRACTITIONERS REGISTERED DURING APRIL.

| Name.                |
|----------------------|
| Henry J. Birkenhaue  |
| Fred T. Zabriskie,   |
| Fred W. Peck,        |
| Thos. C. Chalmers,   |
| Chas. P. Hutchins,   |
| Lewis F. Ellison,    |
| David S. D. Jessup.  |
| Sylvanus Purdy,      |
| Clarence G. Campbell |
| Sydney E. Morgan,    |
| Abram J. Barker,     |
| Paul Allen,          |
| Nicola Mariani,      |
| Calvin Weidner,      |
| Thos. J. Biggs, Jr., |
| Thos. J. Battle,     |
| Joseph W. Barnsdall, |
| Edgar C. Cowles,     |
| Harry R. Bennett,    |
| Chester E. Blackman, |
| Robert J. Lynch,     |
| Edward F. Perry,     |
| Wm. H. W. Hannath    |
| Joseph L. Hetzel,    |
| Harry E. Ballard,    |
| Samuel B. Smith,     |
| John A. Stevenson,   |
| Timothy F. Allen,    |
| Ovid Allen Hyde,     |
| Giovanni Grana,      |
| John W. Cann,        |
| •                    |

Basis of Registration. r. Ec. Medical College, N. Y., College Physicians and Surgeons, N. Y., Cleveland Univ. of Med. and Surg., Bellevue Hospital Medical College, Long Island College Hospital, Jefferson Medical College, Pa., College Physicians and Surgeons, N. Y., Bellevue Hospital Medical College, Bellevue Hospital Medical College, Long Island College Hospital, Bellevue Hospital Medical College, New York Homeo. College, Examined by Conn. Medical Society, Examined by Conn. Medical Society, Ohio Medical College, Bellevue Hospital Medical College. Chicago Homeo. Medical College, Cleveland Univ. Med. and Surg., Dartmouth Medical College, Long Island College Hospital, Bellevue Hospital Medical College, Long Island College Hospital, Ec. Medical College, N. Y., Bellevue Hospital Medical College, Medical Department Univ. of Vermont, Hahneman Medical College, Phil., Albany Medical College, University City of New York, Ec. Medical College, N. Y., Exam'd by Eclectic Medical Assoc'n., Mahary Medical College, Tennessee.

Where Registered. Greenwich. Greenwich. New Britain. Greenwich. Greenwich. Thompson. Greenwich. Greenwich. Greenwich. Middletown. Torrington. Greenwich. New Haven. Manchester. Greenwich. Greenwich. Greenwich. Hartford. Greenwich. Bridgeport. Bridgeport. Greenwich. Greenwich. Fairfield. Stamford. Greenwich. Greenwich. Greenwich. Greenwich. Greenwich. Greenwich.

## MEDICAL PROGRESS.

SALOL IN THE TREATMENT OF ACUTE ANGINA IN CHILDREN.— (Journal des Practiciens, No. 49, 1896). The marked adaptability of salol in the treatment of acute angina in children is well shown by Dr. Carron de la Carrière in an article in a recent number of the Journal des Praticiens. He states that it acts

as an antiseptic and analgesic with especial action upon the larynx. In addition to relieving pain and preventing abscessformation, if administered early in the course of the disease
it shortens its duration. The dose is 2½ grains for each year
to the fourth, 10 grains to the eighth, and 15 grains to the
fifteenth year, to be given three times per day in such a
formula as follows: Salol, 2; oil of sweet almond, 4; powdered
acacia, 4; syrup, 30; distilled water, 60; adding pepermint or
orange-flower water if desired. It should be stopped when the
color of the urine is darkened, and is contraindicated only in
pathological conditions of the kidney, which are exceptional in
children. When abscess threatens, the dose should be increased
until the organism shows itself to be under the influence of the
drug by this change in the urine.

TREATMENT OF FRACTURE OF THE CLAVICLE BY INCISION AND SUTURE.—(Am. Jour. Med. Sc., Apr., 1897). Dr. Geo. W. Spencer after citing several instances where a fracture of the clavicle had resulted fatally from consequent pyæmia, emphysema, or laceration of the subclavian vein, reports two cases where the fragments were brought together and sutured with silver wire with most satisfactory results. In the second case mentioned, the clavicle had received a simple, complete, comminuted fracture at the junction of the middle and outer thirds, and the inner end of the outer fragment was drawn in and down so that it could not be felt. An incision, three inches in length along the bone revealed a small loose fragment and another piece held only by periosteum. The latter was replaced and ligatured with kangaroo-tendon, while the former was removed. The inner end of the outer fragment, long, thin, and ragged, was seen, caught in the subclavius muscle which kept it from coming in contact with the subclavian vessels, though fresh lacerations of the muscle fibres showed that soon the vessels would have been The outer fragment of the bone was raised on a periosteal elevator and a hole drilled through from the anterior to the posterior surface. The inner fragment was similarly treated and a silver wire passed through the holes and fastened. periosteum and skin wound were then sutured and the arm dressed in the Velpean position. In three weeks there was good bony union with no deformity or pain, while, if the operation had not been performed, the muscle fibers between the ends of the fragments might have prevented union, or the outer fragment having pierced the muscle would, in all probability, have torn the subclavian vessels.

THE TREATMENT OF SYPHILIS BY INTRAVENOUS INJECTIONS OF MERCURY.—(British Medical Journal, Dec. 12, 1896). Though the method of administering mercury for syphilis by intravenous injection of a mercurial solution was suggested as long ago as 1803, up to the present time, it has been employed only by surgeons on the continent in Europe. Lane has recently made a careful study, in a London hospital, of a large number of syphilitics who were subjected to this treatment, and reports that the results compare favorably with those obtained from the methods usually employed. The cases he examined included nearly every possible phase of the disease, from the simplest form to the most complicated conditions, with severe tertiary, ulcerative lesions, condylomata, malignant syphilis, etc. Two-thirds of the patients so treated left the hospital absolutely free from any syphilitic manifestations, while most of the others were greatly improved, though they still presented some traces of the disease on their departure. Lane used a one per cent solution of mercuric cyanide in 11 gramme doses, though in the severer cases a larger dose was given in the first few injections. The median basilic vein was usually selected and the operation performed daily, until from four to forty-six injections had been made, according to the severity of the case. No very serious after effects were experienced, and the only difficulty met with in the operation was that in some cases the veins could not be brought into sufficient prominence to allow of the injections entering them with any certainty. The patients can be brought under the influence of the drug almost immediately, and improvement is certain and rapid. The treatment is absolutely painless and the digestion is not interfered with, while the doses which are small can be readily regulated to the varying susceptibility of the Lane concludes that, although the intravenous injection cannot be universally employed, it is a valuable addition to our present methods of treatment.

Diabetes Mellitus.—(Centralb. f. ism. Med., Feb. 6, 1897). Loeb calls attention to a fact in connection with diabetes, which though well known is rarely made use of—viz., that long before the symptoms of diabetes appear a small but abnormal amount of sugar is often present in the urine. He reports the case of a patient examined, whose urine contained 0.25 per cent sugar and had a specific gravity of 1018, but with none of the ordinary symptoms of diabetes. On examination about twenty-three months later, several symptoms were noticed, such as cramps in the calves of the legs and the drinking of more fluids and pass-

ing of more urine than formerly, all of which pointed toward diabetes. The urine on being tested, showed 3.5 per cent sugar. Loeb adds that, while a diagnosis cannot be made from the presence of so small an amount of sugar, yet, if none of the pathological conditions producing glycosuria are present, diabetes should be strongly suspected.

TRAUMATIC TETANUS TREATED BY HYPODERMICS OF CARBOLIC ACID.—The Lancet, Jan. 16, gives a case of traumatic tetanus treated by hypodermics of carbolic acid and followed by complete recovery. The case, a man with punctured wound on the inner side of the ball of the left great toe, from a boot nail, which was followed by the typical symptoms of tetanus. was treated for fifteen days with the usual remedies for the disease, chloral hydrate and potassium bromide, but gradually failed. A consultation was held, and the following treatment Nourishing food was ordered, consisting of eggs with milk and brandy, milk with soda water, jellies, etc., frequently administered in small quantities. Ten grains each of chloral hydrate and potassium bromide were given every two hours, and five minims of carbolic acid (2 per cent solution) were injected hypodermically afternoon and evening. The chloral and potassium bromide were given at 8 p. m. and were followed by intense excitement and numbness in extremities one-half hour later, which continued during the night. Carbolic acid was injected at 10 P. M. and no after effects noticed. After two days' treatment there was a decided improvement and the hypodermics were reduced to one a day, and the chloral and potassium bromide were given every three hours. On the fourth day the hypodermics were stopped, and chloral hydrate in fifteen grain doses was give three times a day. From this time on there was rapid improvement and final recovery.

# HOSPITAL AND CLINIC NOTES, ETC.

LACTOPHENIN IN RHEUMATISM. Mr. Smith, age 26, had been suffering for four weeks with acute articular rheumatism when I first saw him. He had been through several "courses" of treatment by the salicylates, iodides and colchicum. Have heretofore believed that these cases must "run a course" before improving but at a venture tried lactophenin. In twenty-four

hours after the first dose, he having taken eight grains three times, the anodyne effect was marked through the day and the temperature was about normal. The night of the fourth day the patient slept about nine hours, for the first time in four weeks. Six days after treatment began he was able to walk and had no pain on damp days. Four days later he began to walk about everywhere with no apparent difficulty. After fourteen days he resumed his work as a laborer, shoveling coal from coal barges without great inconvenience and has continued for three weeks to date.

G. H. JACKSON, M.D.

Pepto-Mangan in Chlorosis.—Pepto-Mangan has been tried by me and a few colleagues in various diseases associated with a depreciated condition of the blood, altogether in eighty cases, and in the following I will give a few exact data concerning the observation thus far made by us. In the simple chlorosis of females during the period of puberty we have employed peptomangan in about thirty cases with uniformly good results. The remedy was always well borne, digestive disturbances were never observed, the marked symptoms of headache, vertigo, palpitation of the heart, and loss of appetite were improved within a few weeks. The bodily weight increased by one-half kilogram (about one pound). Among the histories of cases at hand the following appear especially noteworthy.

Miss Sched, aged 22, suffered from cedema of the legs, general weakness, marked anæmia; menses absent for several years. Prescribed rest, vigorous diet, massage, and Gude's Pepto-Mangan three times daily. After six weeks' treatment cedema disappeared, menses returned, patient felt better, had better color. Four weeks later menses became abundant, although the pepto-mangan was no longer employed.

Miss Clara F., aged 25, weight 52.5 kilograms (about 110 pounds), great disturbance of nutrition and anæmia; had suffered for five years from amenorthæa, nervous dyspepsia, general neurasthenia, and nervousness; complexion sallow owing to constipation. Gude's Pepto-Mangan administered (altogether 1,100 grammes, 36 to 37 ounces). Result very favorable; weight increased one-half kilogram (about one pound) every week, appearance excellent, general condition much improved, constipation relieved by extract. frangul. fluid. During the eighth week menses returned; headache and stomach troubles have disappeared; patient has great hopes of perfect restoration to health.

This preparation also proves very serviceable in cases of anæmia associated with more or less marked scrofulosis. The abscesses of the skin healed, eczema of undoubted scrofulous character disappeared. The following case is characteristic:

Margaret G., aged 12, a weak, anæmic, and scrofulous girl, had suffered repeatedly from tonsilitis, coryza, anorexia, glandular swellings, and had a pale and sickly appearance. Prescribed for a period of six months three baths containing Kreuznach mother-lye thrice weekly, and Gude's Pepto-Mangan one teaspoonful thrice daily. In all 1,000 grammes (two pounds) of the liquor were used. The girl now looks well, healthy complexion, red cheeks and lips, appetite good, swelling of glands has almost entirely disappeared.

I have further employed the Gude's Pepto-Mangan in that form of anæmia which is found in young women as a complication of uterine trouble or as consequence of profuse loss of blood from repeated abortions or childbirths. The effect was always uniformly good. The patients, who belonged for the most part to the working class, after three to four weeks' use of the peptomangan, were able to resume work (although their nutrition could only be slightly improved), and were able to accomplish as much as formerly.

Margaret Sch., aged 26, unmarried, scrofulous tumors of the neck, anæmia following malaria, gastric catarrh; bodily weight 58 kilograms (about 122 pounds). Duration of treatment two months; 800 grams of medicament used. Material and continuous improvement. Vomiting and headache have disappeared, appetite good, increase of weight two kilograms (four pounds).

Bertha Pr., aged 10 years, 20.5 kilograms (about 43 pounds), marked anæmia after malaria and scarlatina, diphtheria. Five hundred grams (one pint) of Gude's Pepto-Mangan administered in six weeks. Considerable improvement of the general condition. The patient had so much improved that treatment was discontinued, thinking it no longer necessary. Increase of weight 1.5 kilograms (three pounds).

Finally it may be mentioned that I have tried the Pepto-Mangan in several cases of pulmonary tuberculosis. Of course the effect here was only relative, yet frequently we were able to improve the appetite and effect a slight gain in weight.

DR. S. ASCHER, (HAMBURG).

A Case of Trichinosis.—The following case was seen at autopsy at the New Haven Hospital morgue recently. The body

was that of a man approximately 48 years of age, who had been brought to the hospital in an unconscious condition, with complete paralysis of the right arm and leg. His previous history was entirely unknown. The treatment produced but little improvement in his condition and he remained unconscious up to the time of death, which occurred two weeks after admittance to the hospital. The body was fairly well nourished; rigor mortis quite marked. The most noticeable external peculiarity was the absence of the scrotum, each testicle being contained in a small fleshy pouch just below the corresponding external abdominal ring. There were also several old scars on the lower part of the abdomen and upper part of the thighs, probably the results of abscesses. As was expected from the clinical history a brain lesion was found. On opening into the cranial cavity about 250 cc. of a clear straw-colored fluid escaped; the cerebral substance was œdematous, and both lateral ventricles were filled with a similar fluid. The basal ganglia of the left side had undergone a degenerative softening. The cause of this was not satisfactorily demonstrated, but was presumably connected with the condition of the arteries at the base of the brain, many of which showed localized thickenings of the intima. The heart was large, weighing 645 grams, the increase in size being chiefly due to hypertrophy of the wall of the left ventricle. The valves were normal with the exception of a slight thickening with calcification at the attached border of one flap of the mitral valve. arteries showed localized thickenings of the intima. lung was normal. The right lung was firmly adherent to the thoracic wall and diaphragm, was congested and œdematous, with scattered areas of solidification. While separating this from the diaphragm the latter was seen to contain large numbers of minute white dots, little more than pin point in width, but slightly elongated lengthwise of the muscle fibers. bodies were found in the muscles over the thorax, the intercostal, psoas and thigh muscles, these being the only voluntary These proved microscopically, as suspected muscles examined. from naked-eye appearances, to be encysted muscle trichinæ, and probably had been present for a long time as sections showed that in many of the minute masses the worms had entirely lost their outlines, the entire mass then consisting of a finely granular material similar to that forming the cyst wall of the encysted trichinæ. Others of the trichinæ were still alive as at least one, obtained by placing a piece of the fresh tissue in water, was seen to slowly uncoil itself to a slight extent, and again coil up. Of the other lesions found there was gangrene of the small intestine for about 15 c. m. at a short distance from the cæcum, granular contracted kidneys, old periplenitis, beginning cirrhosis of the liver, and chronic aortitis. The testicles were both small and soft, did not contain any spermatozoa in the tubes of the epidydimis, and the glandular epithelium of the testicles showed marked fatty degeneration. It is noticeable that in spite of the length of time that the trichinæ must have been present, together with their immense numbers and wide distribution, there was no marked emaciation of the body, and they were presumably in no way connected with the immediate cause of death, the cerebral lesion, which was rather suggestive of syphilis.

In connection with this autopsy it is of interest to note the clinical results obtained from a case of trichinosis, reported by Mr. T. R. Brown in the Johns Hopkins Hospital Bulletin for April, 1897. The patient had been ill for about six weeks when admitted to the hospital, and complained of general muscular pains which had been severe for the two weeks before admission. There was irregular fever and extreme muscular tenderness, especially in the arms and legs. The diagnosis of myositis due to trichinosis was confirmed by finding actively motile trichinæ in pieces of muscle removed from the arm. After two months the patient was discharged from the hospital well. chief interest here attaches to the blood examination. was a marked leucocytosis, as many 30,000 leucocytes per cubic millimeter being present at times, but the polymorphonuclear ventrophiles were not only not increased, but much decreased, at one time being only 6.6 per cent of all leucocytes, while the eosinophiles reached the enormous number of 68.2 per cent, more than twice as large a per cent as ever before reported. author suggests the possible diagnostic value of this increase in the eosinophiles in trichinosis in differentiating between it and rheumatic troubles which it may easily be mistaken for. Much interest attaches to this report by Mr. Brown because of the infrequency of diagnosing the disease clinically. says that this is the second case only which he has seen clinically. C. J. B.

FORMALDEHYDE, THE NEW DISINFECTANT.—The proportion of deaths from diseases which are known to be preventable, is, a large one and is constantly growing. Many of these are germ diseases, and by controlling them much sickness

and many lives can be saved. Since they are preventable their existence is, to a certain extent, a crime. This is the constant testimony of sanitarians. The extermination of such diseases should, therefore, be a matter of anxiety, of study and of practice. The two methods which will secure success in this are, first, isolation; and second, disinfection. If every case of contagious disease is at once isolated and if the room, its contents, the patient, his attendants and everything pertaining to them are thoroughly disinfected so that every germ is destroyed, there will be no second case of the disease. I need not enumerate the diseases which are included in the category, preventable-vou know them all well. You know as well the methods of disinfection and each one of you has his own technique. If I should ask you gentlemen what germicides you use in your disinfection you would probably say, bichloride of mercury and carbolic acid, for such articles as can be washed, and the vapor of sulphur for the walls and hangings of rooms. As to the first two, all would agree, but some would differ as to the germicidal power of sulphur. It probably will kill everything but a germ. I have known it to be tried with immense success on a room and bed infested with bed-bugs. But the germ is far more dangerous while much less disagreeable than the cimex lectularius. Besides, we are not sure that the tubercle bacillus can be thus killed, and since tuberculosis is recognized as a preventable disease, and hygienic measures are to be adopted against it, it is necessary to have an agent which will destroy it. Sanitarians have been gradually losing faith in sulphur, until some State Boards of Health have discarded it altogether. But if it is deficient it is also destructive, injurious to the many things which have adorned the sick-room and made the life of the prisoners therein more endurable. Not only that, but its application requires time-twenty-four hours, or over a night at least, must the room be closed and the vapor left. Perhaps it was this last objection, in this busy, hurrying world, when time is counted by seconds, which has led scientists to look for some other agent, quicker in action, surer in effect, less injurious in result.

The problem of car and steamer sanitation has occupied the Government, which has experimented considerably in its laboratories. Parents wonder at times how certain diseases are taken. Let them wonder why many more are not taken. A man with a syphiloderm, say of the scalp, rides comfortably in a railroad car, his legs stretched to their full, while he, sitting on the edge of the cushion, lazily scratches his head by rubbing it against

the back of the seat. He gets out and a lady with her child occupies the seat. The little one soon becomes restless, jumps up and stands by its mother's side. Its face just comes to the place where the former occupant has rubbed his syphilitic scales and crust into the soft plush, and the little one cannot help applying its lips and mouth to them. Or, if the train is going South it is filled with consumptives thither bound. spitting freely and promiscuously. The doors, windows and ventilators are shut, the air is close and warm. The sputum dries, the living germs are released. They are wafted about and settle upon the cushions and upholsterings which become your coach and drapings by night, and what a trap for the delicate passenger just recovering from pneumonia or the one otherwise well but carrying the food on which bacilli fatten. United States Government has vigorously sought some agent by which railroad cars might be properly disinfected without delaying the use of the cars or injuring the costly fabrics with which This has been found, we believe, in Formthey are furnished. So accepted by sanitarians generally, this agent is coming to be used for the disinfection of rooms or of any confined place where germs are to be destroyed. It has the merit of acting without the presence of moisture; indeed, dampness hinders its efficiency, unlike chlorine and sulphur; of not injuring any fabric, and of not being harmful to persons unless they are exposed for a long time.

The experiments of the Government were carried on under the direction of Dr. J. J. Kinyoun, Passed Assistant-Surgeon, U. S. M. H. S., and the room disinfection was done in the wards and rooms of the new small-pox hospital of the District of Columbia. I can select only a few of the results obtained and shall take those in which the results with the diphtheria cultures were most striking, because that disease is more common with us than any of the others tried.

Room A. Capacity, 7,400 cubic feet; percentage of formal-dehyde, 0.5; time, 23 hours. b. Cultures placed on coverslips, placed in double envelopes, one sealed with paraffin and enveloped in ten layers of blankets. Anthrax, growth; diphtheria, no growth; pyogenes aureus, growth. d. Cultures spread on cover slips, placed in double envelopes, the inner one sealed with paraffin, and enveloped in thirty-six layers of new cotton sheeting. Anthrax, no growth; diphtheria, no growth; typhoid, no growth; pyogenes aureus, no growth. f. Cultures spread on cover slips, placed in double envelopes, and enveloped loosely

in a blanket gathered into a bag. Anthrax, no growth; diphtheria, no growth; typhoid, no growth; pyogenes aureus, growth. Room B. Capacity, 10,500 cubic feet; percentage of formal-

Room B. Capacity, 10,500 cubic feet; percentage of formal-dehyde, 0.25; time, 23 hours 30 minutes. b. Cultures spread on cover slips, placed in double envelopes, the inner one sealed with paraffin, and enveloped in ten layers of blanket. Anthrax, growth; diphtheria, no growth; pyogenes aureus, growth. d. Cultures spread on cover slips, placed in double envelopes, the inner one sealed with paraffin, and wrapped in thirty-six layers of new cotton sheeting. Anthrax, no growth; diphtheria, no growth; pyogenes aureus, no growth. f. Cultures spread on cover slips, placed in double envelopes, the inner one sealed with paraffin, and wrapped in a blanket loosely gathered into a bag. Anthrax, growth; diphtheria, no growth; pyogenes aureus, no growth.

Room C. Capacity, 3,300 cubic feet; percentage of formaldehyde, 1.00; time, 22 hours. b. Cultures spread on cover slips, placed in double envelope the inner one sealed with paraffin, and enveloped in ten layers of blanket. Anthrax, no growth; diphtheria, no growth; pyogenes aureus, growth. d. Cultures spread on cover slips, placed in double envelopes, the inner one sealed with paraffin, and enveloped in thirty-six layers of new cotton sheeting. Anthrax, lost; diphtheria, no growth; pyogenes aureus, growth. e. Cultures in double envelopes, the inner one sealed with paraffin, and wrapped in folds of three sheets gathered into a bag. Anthrax, no growth; typhoid, no growth; diphtheria, no growth; pyogenes aureus, growth. g. Cultures spread on cover slips, placed in double envelopes, the inner one sealed with paraffin, and exposed on mantel in room. Anthrax, no growth; diphtheria, no growth; typhoid, no growth; pyogenes aureus, no growth. h. Cultures placed on cover slips and placed in double envelopes, the inner one sealed with paraffin, and exposed between the leaves of a closed book. growth; diphtheria, no growth; pyogenes aureus, growth.

It is hardly worth while to make further selections from these experiments. They are sufficient to draw conclusions from. The first thing noticed is the difficulty of destroying the streptococcus pyogenes aureus; the second, that in almost every test the diphtheria germ was killed, and this is of importance for practical use. The gas is a reliable disinfectant for surfaces and for the lighter articles, such as curtain hangings, clothing, carpets and bed-coverings. It is germicidal in all save where the test cultures were tightly wrapped in many layers of the fabric. In-

teriors of books are most difficult of all to disinfect. Dr. Kinyoun says it is doubtful whether the interior of articles such as upholstered furniture, mattresses, and pillows can always be disinfected unless a much larger percentage of the gas is applied than was used in the above experiments. The gas is not injurious to fabrics. It has been tried upon wool, silk, feathers, hair. Only two silks were changed in color and they were shades of red. No article was changed in strength.

Formaldehyde, formic aldehyde, formol, is not a new substance. It was discovered by Von Hoffman and has been known since 1868. He obtained it from wood alcohol by passing the vapor of the alcohol over finely-divided platinum or copper. It was thought more or less of a chemical curiosity until a few years ago. An aldehyde is al-alcohol, de-hydrogenated. As a rule an alcohol becomes an aldehyde when, by action of oxygen in limited amount, it loses two atoms of its hydrogen. There are various aldehydes—ethyl, methyl, formic. Methyl alcohol, CH<sub>2</sub>OH, becomes by loss of hydrogen, CHOH, formic aldehyde, and that, by addition of oxygen, becomes CHOOH, Methyl alcohol is made from dry distillation of formic acid. wood and is used in the arts under the name of wood-spirit or wood-alcohol. Dr. F. C. Robinson. Professor of Chemistry at Bowdoin College, at the express request of the Maine State Board of Health, has made experiments both as to the disinfectant powers of formaldehyde, and the best apparatus for generating the gas. He has demonstrated that it is a good germicide and has invented the best formaldehyde generator hitherto devised. Formaldehyde is a gas of about the same specific gravity as air-1.6; air being 1. It has a remarkable penetrating power and therefore must be developed rapidly. There must be a large quantity in a short time. This is an absolute necessity and is a difficulty in the use of the gas. The great danger is that too little will be used, and the more especially as many appliances are being put upon the market, many of which are too cheap and too small to be of any value.

The main obstacle in the way of applying this gas is in not being able to close the apartment sufficiently tight to prevent the escape of the larger part of the gas. The only way this can be guarded against is by using an excess of gas. Just in what proportion that excess should be will depend upon the local conditions. The length of time of exposure is secondary to the amount of gas used. A large per volume strength will accomplish the object better and in a shorter time than by using a

small amount of the gas and prolonging the exposure. For room disinfection, under favorable conditions, fully twelve hours' exposure should be given. After twenty-four hours it is believed little or nothing will be accomplished. The generator, of course, must be used with care, for both the alcohol and its gas are inflammable, but it seems as if in formaldehyde had been found a disinfectant efficient for practical use not only in the rooms where disease has been, but for one's own body clothing after a visit to contagion, for one's office or even for domestic house cleaning.

N. E. WORDIN, M.D.

## BOOK REVIEWS.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science by leading authors of Europe and America. Edited by Thomas L. Steadman, M.D., New York City, in twenty volumes. Volume X., "Disease of the Nervous System." William Wood & Co., New York, 1897.

The tenth volume of the "Twentieth Century Practice," devoted to the diseases of the brain and its meninges, and the functional diseases of the nervous system, has among its list of contributors some of the foremost neurologists of the day. largest share in the work—the diseases of the brain and its meninges—has been undertaken by Dr. Collins. gives a brief but comprehensive description of the morphology and anatomy of the brain before entering into the consideration of the disease of that organ. Both this chapter and the one on the disease of the meninges of the brain by the same author are well written and contain much new material. The chapter on brain tumors was taken by Dr. Sachs and that on intracranial hemorrhage, embolism and thrombosi by Dr. Dana. also writes a chapter on neurasthenia. Dr. Chas. Féré has undertaken the subjects of hysteria and epilepsy and has handled them in a most exhaustive manner while his description of the spasmodic neurosis is particularly good. In the chapter on the disorders of speech, Persing has devoted considerable attention to a discussion of the acquisition of language by a child before taking up the subject of aphasia and the disorders of speech The last chapter, that by Sanger Brown, on the disorders of sleep, is a valuable addition to the work. The author. before taking up the subject proper, discusses the physiology of the causation of sleep, mentioning the latest theories on the subject. His treatment of the subject of unrest is also clear.

## ALUMNI AND SCHOOL NOTES.

Professor John S. Ely of New York has been elected to the chair of the Theory and Practice of Medicine of the Yale Medical School and will begin his duties October 1, 1897. Dr. Ely graduated from the Sheffield Scientific School of Yale University in 1881 and after spending a year there in post-graduate study, pursued a course in physiology and chemistry at the Johns Hopkins University for a year and then entered upon the study of medicine at the College of Physicians and Surgeons where he was graduated in 1886. After a service as interne in Bellevue Hospital he devoted a year and a half to study in Europe, and then returning to New York, he engaged in private practice, at the same time holding positions at Roosevelt Hospital, in the department of Pathology at the College of Physicians and Surgeons, and at the Woman's Medical College, where he has been Professor of Pathology for several years.

- 1878. Professor Dudley A. Sargent has an article on "Exercise and Longevity" in the May number of the North American Review.
- 1878. Dr. C. Purdy Lindsley and wife will spend the Summer travelling in Europe.
- 1895. Charles G. Child has opened an office at 142 West Seventy-eighth street, New York City.
- 1895. Dr. L. Smirnow removed his office from 38 Elm street to his house 15 Dixwell avenue.
- 1898. Herman A. Tyler, Jr., has been appointed substitute for the Summer in the Hartford Hospital.
- 1898. Charles P. Smith and Curtis W. Welch have appointments in the Broome Street Lying-in Hospital, New York, during July.

The Junior class next year will have examinations in Anatomy, Physiology, Materia Medica, Pathology and Medicine.

Out of the eleven men who have received hospital appointments so far, seven are college graduates. Five from Yale University, one each from Wesleyan and Trinity.

The following will be the addresses of the graduating class after June, so far as they have been obtainable:

- W. S. Barnes, New Haven.
- T. E. Beard, New Haven.
- ]. D. Blanchard, Bridgeport.
- H. H. Briggs, New Haven.
- J. B. Brocksieper, Rotunda Hospital, Dublin.
- E. D. Chipman, Springfield City Hospital, Springfield, Mass.
- F. F. Cohane, post-graduate course in New York.
- J. A. Cooke, will take a course in the Hudson Street Hospital, New York.
  - B. F. Corwin, City Hospital, New York.
  - S. J. Ferris, Rotunda Hospital, Dublin.
  - R. S. Graves, St. John's Hospital, Brooklyn.
  - J. B. Griggs will study a year in Berlin, Germany.
  - J. E. Herrity, Rotunda Hospital, Dublin.
  - A. L. Howard, St. Thomas, W. Indies.
  - C. L. Kilbourn, New Haven Hospital.
  - J. A. Lee, St. Mary's Hospital, Brooklyn.
  - P. D. Littlejohn, pharmacist, New Haven Hospital.
  - M. L. Loeb will spend Summer in Vienna.
  - A. E. Loveland, Passaic Hospital, Passaic, N. J.
  - E. K. Loveland, Morris, Conn.
  - F. J. McGuire will spend Summer in New York.
  - E. F. McIntosh, New Haven.
  - G. T. McMaster will take a course of study in New York.
  - F. I. Nettleton, Norwich Hospital, Norwich.
  - T. D. Pallman, New Haven.
  - W. F. Penn, Freedmen's Hospital, Washington, D. C.
- W. G. Reynolds will probably take a post-graduate course in New York.
  - L. H. Stewart will spend the Summer in New York.
  - F. H. Todd, Paterson General Hospital, Paterson, N. J.
  - G. H. Warner will take a course in New York.
  - W. M. Weaver, Hartford.
  - F. H. Reilly, St. Joseph's Hospital, Paterson, N. J.
  - E. T. Smith, New Haven Hospital.
- G. A. Weaver will take course of study in the Post-Graduate School of New York.
  - H. G. Welch, City Hospital, New York.
  - L. H. Wheeler, Westport, Conn.
  - S. R. Woodruff, Rotunda Hospital, Dublin.

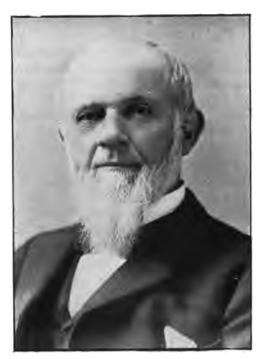
Prof. W. M. Polk, M.D., of New York City, will deliver the Commencement Address in Medicine upon the subject "How to Work," at the College Street Hall, on Tuesday, June 29th, at 12 M.

### DR. ELISHA MUNGER, '75 M. S.

Dr. Elisha Munger, '75 M. S., died at his home in New London, Conn., May 14th, at the age of forty-nine. He had been ill for some time, but his death was due to an operation for appendicitis performed a few weeks ago. Dr. Munger practiced medicine in New London County for the past twenty years, commencing in East Lyme, and later removing to New London, where he had lived for nine years. Dr. Munger leaves a wife and son, William R. Munger, who is at present a Junior in Yale Medical School.

### DR. JOHN P. ATWATER, '37.

John Phelps Atwater, M.D., '37, died at his home in Poughkeepsie, New York, on Sunday, May 23d. Dr. Atwater was born March 4, 1813, at Carlisle, Pa. His father was Rev. Jeremiah Atwater, Yale 1793, and his mother was Clarissa, daughter of Rev. Eleazer Storrs, Yale 1762. His parents moved to New Haven when he was two years of age, and resided here while he was in college. He studied medicine after graduation, mostly at the Yale Medical School, and received the degree of M.D. from Yale College in 1837. In that year he removed to Cincinnati, Ohio, where he engaged in the practice of his profession until Since that time Dr. Atwater has not been engaged in 1845. After leaving Cincinnati in 1861 he lived a short time practice. in Brookline, Mass., and the following year removed to New Haven, Conn., where he resided for about eight years, and then went to Poughkeepsie, N. Y. Dr. Atwater married July 27, 1845, Miss Lucy J. Phelps of West Townshend, Vt. He leaves two children, Edward Storrs Atwater, '75, and Lucy Jane Atwater.



PROFESSOR CHARLES A. LINDSLEY, M.D.

Engraving from "Physicians and Surgeons of America," by permission of Dr. Irving A. Watson.

Professor Charles A. Lindsley, M.D., has resigned his position as Professor of the Theory and Practice of Medicine in the Yale Medical School. Professor Lindsley's resignation was tendered a year ago, but he was persuaded by the Faculty to serve until the close of this school year when his resignation will go into effect. Professor Lindsley has been elected Professor Emeritus of the Theory and Practice of Medicine.

Dr. Lindsley's connection with the Medical School dates back for the past thirty-nine years and has continued until the present time. During this period he was professor of Materia Medica and Therapeutics for several years; he was Dean of the Medical School for twenty-three years and since 1883 he has held the chair of the Theory and Practice of Medicine.

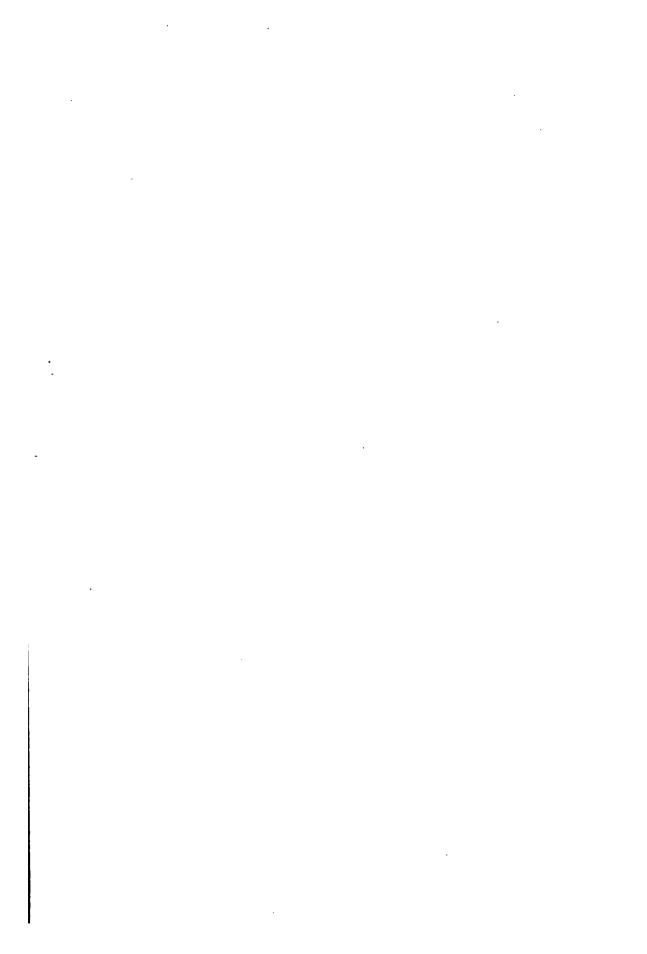
Dr. Lindsley graduated from the Yale Medical School in 1852 and since then has been engaged in the active practice of his profession in Connecticut. His interest in sanitary matters has

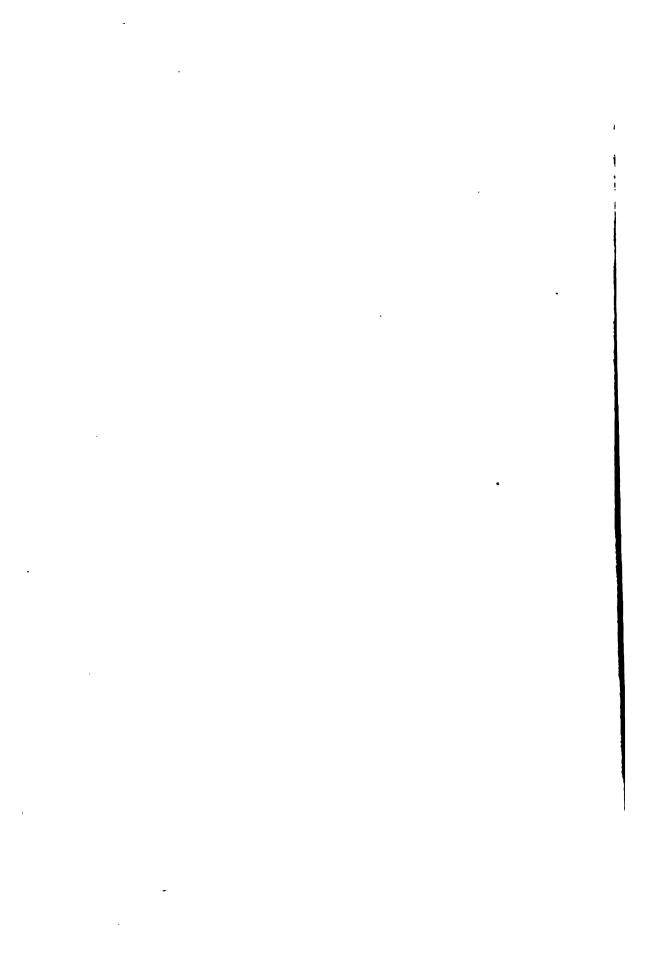
made him prominent in health affairs of this State since 1874, when he was elected Health Officer of New Haven. For the past fifteen years he has been Secretary of the Board of Health of Connecticut, and during that time has made many improvements in the sanitation of New Haven and the State of Connecticut. Among Dr. Lindsley's best known publications along this line are "Sanitary and Unsanitary Conditions of the Soil," "Prevailing Methods of Sewage Disposal," "Modern Vaccination," etc.

The following resolutions were unanimously passed at a recent meeting of the Medical Faculty of the University:

"Resolved, That we hereby place on record our high appreciation of the services which Prof. C. A. Lindsley has rendered the Medical School as a member of this Faculty for thirty-seven years and as its executive officer for twenty-three years.

"Resolved, That the thanks of the Faculty be extended to Prof. C. A. Lindsley for considering the best interests of the school and consenting to serve a year after the time he had fixed for his retirement."





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